



EQUILIBRIUM[®]

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Cover Picture

This 'Little Detective' was manufactured by Chicago Seale Company. It is made of cast iron and measures 13" (320 mm) long by 5 1/4" (130 mm) high with a 7" (175 mm) diameter plate. The brass beam is graduated from 0 to 1 1/2 pounds by 1/4 ounce and the scale, with a complete set of slotted poises, has a capacity of 25 pounds.

This example retains much of its original paint and still balances well. **However, the design is** Chicago Seale also made a secoop version of the 'Little Detective'. To learn more about this well-marketed scale company, read the article on pages 3455 - 3460.

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Bagging and Tagging

BY JOHN KNIGHTS

I was interested in the 'Losing a Few Pounds' article in issue number 4, 2008. I, too, have one of the Salter Coal Balances, described by Kurt Beyreis (Fig 1), which is also a Class III instrument from the Model Regulation period at the turn of the 19th and 20th Century.

I would assume the scale was intended for use by Coal Merchants to weigh up sacks of fuel for either taking out on a hawking round or for delivering to customers who had placed an order. It was becoming normal for solid fuel to be packaged in certain quantities in open sacks when carried on a vehicle. Many areas had Bye Laws in place to require this **packaging**, and it later became a national requirement. The prescribed quantities were: two hundredweight (224 lb), one hundredweight (112 lb), half a hundredweight (56 lb), quarter of a hundredweight (28 lb) or 14 pounds. Thus, the dial of this scale was arranged to deal with these quantities (from 28lb to one hundred weight at least) with a number of pounds over each quantity to allow for bag weight, which could be ascertained on the first 15 lb



Figure 1. //

section. The bags

in question were stout, reusable Hessian sacks with metal tags showing the weight of the contents on them. These sacks could be wet when used and, therefore, quite heavy. The fifteen-pound range seems rather large, but they were probably having to allow for extreme situations. The layout of the dial would make it easier for an operator to read the scale and pack sacks at the correct value. Using a conventional dial marked with a continuous scale of pounds (Fig 2) would have rendered the weighing process more prone to error, especially when carried out in the far from ideal conditions that existed in a typical coal yard.

Coal merchants in the UK, however, traditionally used either equal armed 'dead weight' machines or the somewhat notorious 'bob-up' platform scale to weigh up solid fuel, and I doubt whether the Salter Coal Balance would have been widely used, despite its obvious advantage of portability. It would, however, have been a convenient device to carry on the vehicle, as required by law.

I recall various examples in the 1960s of dead weight scales and weights being jettisoned from the backs of coal lorries as they went zooming round corners.

The lightweight Spring Scale would have been a rather more secure alternative.



Figure 2. //

Serendipity* Strikes Again

BY JOHN KNIGHTS

I was recently requested, by a fellow member, to drag out my collection of old *Monthly Reviews*, the house journal of the British Institute of Weights and Measures Administration, later the Trading Standards Institute, to search for some material in which he had an interest. This is a motley collection of documents snatched from various impending destructions over the years and now kept in a large chest in the corner of our dining room.

I dutifully pulled them out, all the way back to the 1890s and began to plough through this somewhat dog-eared archive. Having checked each decade, I concluded that the material being searched for was not in fact there, but I was becoming increasingly fascinated by some of the articles and items that appeared over the years. Therefore, as when looking up a word in the dictionary, I was regularly diverted into new areas of research.

Whilst looking through the 1960s; among the period pieces on coal vending machines, chunterings about the likelihood of electronic weighing and advertisements for second-hand weighbridges, my eye was suddenly taken by an article headed *The Bushelmaster*. This article was about a new invention (new in 1961, that is) for a device for use in the milling industry to automatically sample grain from the bulk as it passed through the flow line in the mill and calculate the bushel weight, an automated chondrometer no less.

This Bushelmaster was, of itself, quite interesting, but what caught my eye was the statement at the beginning of the article: *The weight per volume of grain has always been an important factor in the milling industry and for many years the only means of making an assessment of this factor has been by direct weighing, by one of the several types of chondrometers, or by some other form of static test.*

My thoughts returned to a large lump of cast iron which was now, having been exiled from the house by 'she who must be obeyed', securely nailed to the wall outside the back door. This was the subject of an article in *Equilibrium* in Issue No.2 2006 when I mused on its possible uses. The device measures out one tenth of a bushel apparently from a dynamic stream of grain or similar free flowing material. As the measurement of 'bushel weight' was apparently such an important part of the milling industry (I had previously imagined it was a figure used solely within the grain trade to estimate the value of a consignment), it was apparent that such a measuring instrument would probably have been used, in pre 'Bushelmaster' days to draw a measured volume of grain (one tenth of a bushel being particularly appropriate, of course) at regular intervals, as it passed through the mill flow system. This **grain** would then be weighed on a suitable scale to calculate the density and thus monitor the all important bushel weight of the grain.

*The faculty of making happy chance finds; a word coined by Horace Walpole from the title of the Fairy Tale, "The Three Princes of Serendip", who apparently specialised in such lucky discoveries

Notes:

1. 'See Pump Up the Volume', Notes and Queries number 152 in EQM 2006 Issue 2 pages 3148-3150.



The Irish Apothecary Standard

BY NORMAN BIGGS

In 1618 the newly-formed Society of Apothecaries of London decreed that the weights used for dispensing medicines should be based on the troy weight system. Specifically, the apothecaries' dram was declared to be one-eighth of the troy ounce (3.89 grams). This system persisted for several centuries, but it had a serious defect. The apothecaries bought and sold their powders by the averdepois (often spelt avoirdupois) system, and the averdepois ounce (28.4g) was not the same as the troy ounce (31.1g). The anomaly created many difficulties, and by the 19th century it was clear that a more rational system was needed. This article is about one such system which, although unsuccessful, has left behind a few items to bewilder and intrigue the modern collector of scales and weights.

Michael Donovan was a professor of Chemistry in Dublin, best known nowadays as the author of the volume on Chemistry in Lardner's *Cabinet Cyclopaedia*. In a review of the *Dublin Pharmacopoeia* published in 1826, he suggested the apparently simple expedient of changing the mass of the apothecaries' dram slightly, so that it would be one-eighth of the averdepois ounce, 3.55g instead of 3.89g. In 1850 a new version of the *Dublin Pharmacopoeia*¹ was published, and in it Donovan's suggestion was adopted. It was admitted that this proposal might create some difficulties, but the objections were dismissed rather abruptly. It was also noted that Donovan himself had offered to supply the new weights that would be needed *without the slightest view to personal profit*.

Such weights were indeed produced. Collectors are familiar with the very common Avery 'octagonal' weights (Figure 1), with a diamond mark giving the date of registration as 18 September 1850. Several of those who have written about these things (Crellin & Scott, Vangroenweghe & Geldof², myself³) have noticed that occasionally the W & T. A. at the foot of the design is replaced by a single letter A (Figure 2). The variety is very rare, and the letter A has hitherto been regarded simply as a contraction of the Avery name. But weighing the objects reveals the true reason for it: whereas the two-dram W&T. A. version weighs 7.83g, the corresponding A version weighs only 7.09g. These figures are almost exactly one-quarter of the troy ounce and averdepois ounce, respectively, and so it is reasonable to conclude that the letter A stands for averdepois, and this version was intended for the 'Irish standard'.

The conclusion is supported by another rare apothecary weight (Figures 3,4). This two-dram weight also has the single A, and it is clearly Irish, since it displays two harps and the name of a Dublin maker, R. Gatehell, on the reverse. The mass of the example shown is 7.11g, and another weighing 7.09g has been recorded. Further confirmation that the 'Irish standard' was implemented for a while comes from the label on a box of scales by Samuel Gatehell (EQM 1799 & Figure 5), which refers to the Avoirdupois Apothecary Standard.



Figure 1. ▲ ▲



Figure 2. ▲ ▲



Figure 3. ▲ ▲



Figure 4. ▲ ▲

Sadly, the Irish solution did not find favour elsewhere. It was quickly pointed out that the averdepois ounce was already divided into drams, but by statute it was decreed that there should be 16 of them, rather than 8. Opponents claimed that the Irish weights were illegal, and it is fairly certain that they were never used in England. A good account of the debates on this issue, and some of the alternative solutions proposed at the time, is to be found in the tract by Bell and Redwood⁵.

Figure 5



Notes:

1. *The Pharmacopoeia of the King and Queen's College of Physicians in Ireland*. Dublin: Hodges and Smith, 1850. See the preface, pages xxi-xxv.
2. Crellin, J. K. and Scott, J. R., 'Drug weighing in Britain', *Medical History* 13 (1969) 51-67. See Figure 5c.
3. Vangroenweghe, D. and Geldof, T., *Pondera Medicinalia*, Bruges: 1989. See page 65.
4. Biggs, Norman, *Apothecaries Weights*, White House Publications, 1994. See page 18.
5. Bell, J. and Redwood, T., *Historical Sketch of the Progress of Pharmacy in Great Britain*, London: Pharmaceutical Society, 1880. This book is available in Google Books, and in a modern print-to-order version.

A Salesman's Tale

BY PADDY WHYTE

For most of my early working life I was employed by W & T Avery Ltd, as a shop boy, an apprentice, a service mechanic and then a foreman servicing weighing machines all over Ireland. Enjoyable and rewarding though this was, after fifteen years, I began to feel the need for a career change. With the prospect of a "Decimalisation Sales Boom" in sight, selling weighing equipment seemed an obvious likely outlet for my experience and inherent talent, but my approach to join the Avery sales division was turned down. Shortly afterwards we parted company on good terms.

In 1968 I acquired the agency for Berkel weighing equipment and geared myself to challenge the Avery monopoly which stood at 73% of retail sales in the Dundalk area – at that time Berkel held just 8% of the market. With the unique timing of decimalisation and after my 17 years of hard work, the tide turned and Berkel business blossomed to secure a staggering 71% of retail sales in my area. Naturally, I was then feeling rather pleased with myself.



Berkel 1711H 20 lb scale.
Exchanged by Paddy Whyte for a donkey.
At that time it was by far the best selling Berkel model.

In the early years trading was tough and closing a sale against strong competition could prove more than a little difficult. On one occasion, desperate to beat the opposition, I took a gamble and acquired a donkey - yes a donkey, in part exchange for a Berkel model 171H 20 lb butchers' scale. Knowing nothing about donkeys, I was more than a little surprised, and absolutely delighted, to find my acquisition, a brown mare, was in foal. A few weeks later I was presented with a darling pure white female foal (a rarity from a brown mother) which we christened 'Snowy'. This new addition got great publicity from the local press and national television, and soon Snowy was to become an enormous asset in my selling career.

With a story to tell and photographs to stimulate interest, I soon learned that potential customers had a soft spot for donkeys who produced white foals. One of those donkey photographs soon became a permanent addition to my selection of sales brochures, and as I leafed through them the photograph, like magic, would drop picture side up onto the customer's counter. Interest was immediately stimulated and, of course, I had to relate the story, but suitably embellished to fit the occasion, behind the donkey and foal acquisition. The effect was remarkable, for the butcher, grocer or supermarket manager invariably relaxed and became more receptive towards the idea of purchasing a new scale.

As you can imagine the story and cherished photos carried me through many a difficult sale, and I blessed the day I made the deal that brought that old donkey into my possession.

After many happy years with Berkel, I was astonished when W & T Avery Ltd offered me an attractive agency that I just had to accept. So I spent the last six years of my career playing my part in restoring the Avery name in the Dundalk area. However, I have to record that, in spite of my earlier success, the Area Manager was not remotely interested in acquiring donkeys. On reflection, I guess he made the right decision, for I doubt there were any livery stables at the Soho Foundry, Birmingham - the home of W&T Avery.

I retired in 1991, concentrated on my golf, built up a collection of antique scales and bred some donkeys. Regrettably, I had no luck whatsoever in producing any more white foals. Two years ago I joined ISASC (EUROPE) and got associated with the nicest group of people imaginable.

And the donkey? Well, Snowy lived to a ripe old age on our small farm, and over the years was a great favourite with our five children and their friends.



Nell, the donkey taken by Paddy Whyte in part exchange for a Berkel 171H 20 lb scale. With her is Snowy, her pure white foal that proved to be quite a sales asset.

Old Advert

This old Fairbanks trade card was printed by Donaldson Brothers, Five Points, NY. Thought to date from the late 1800s, its reverse reads as follows: George W. Sprague, Dealer in Hardware, Cutlery and Manufacturers' Supplies, Agent for Fairbanks' Standard Scales, 27 Main Street, West Meriden, Conn.



Weighing Huge Aeroplanes

BY JACK WHITE

Avery's were no strangers to weighing heavy loads, and normally 100 tons was no problem. But in the late 1940s they were faced with the difficult job of weighing the largest airliner in the world - the Bristol Brabazon. They decided to build a special system of weighbridges for weighing the complete aircraft, by aggregating the weights obtained at each of the three sets of wheels.

This required three specially designed, high capacity, fabricated steel weighbridges, two for the main wheels and the third for the nose wheel.

The two for the main wheels

were 12 ft by 12 ft in area and 5 ft deep; the strength of each was 200 tons, with weighing capacities of 180,000 lb by 10 lb divisions. An ABH steelyard incorporated on the side of the outer framework was set and read by the weighman standing in the pit. There were four main levers and four intermediate levers in each of the larger weighbridges, with 39 knife-edges and bearings. The weighbridge for the nose wheel had 31 knife-edges, including 2 on the steelyard, and weighed up to 34,000 lbs on the major bar and 1,000 lbs by 10 lbs on the minor bar.

The weighbridges were subjected to the normal weights and measures tests. In the case of the larger ones, the maximum error revealed was 5 lbs, and each was sensitive to 2 lbs. While it is noted that an error of 5 lbs on a 180,000 lb capacity machine is a ratio of 1 in 36,000 or 1/360th of one per cent, the real accuracy is truly appreciated. In fact, the weighbridge was twenty times more accurate than a 2 oz dispensing beam scale with an error of half a grain. In the case of the smaller machine, a maximum error of 3 lb was revealed, and it was sensitive to 4 lb at full load. The official report on tests carried out at Avery's Soho Foundry states: *it was noted that for each weighbridge the steelyard would respond to a weight of 2 lb for all loadings from 0 lbs to the maximum load, the accuracy being almost unbelievable.*

The weighbridges were installed for BAC Ltd at Filton, near Bristol, and the sensitivity and slight errors found at Soho were the same. When the Brabazon was weighed, the recorded weight was 210,000 lbs, well inside the agreed maximum of 100 tons. Two days later, on 4 September 1949, the Brabazon made its first flight. It never went into service, but twenty years later the first supersonic airliner Concorde was weighed on three similar weighbridges, also made by Avery and installed at Filton.

For Concorde, the two main machines were 18 ft by 18 ft, each having a capacity of 220,000 lbs, and the nose wheel weighbridge was 60 ft by 12 ft with a capacity of 50,000 lbs. The long nose wheel platform enabled aircraft with a variety of wheel bases to be weighed. The weight of Concorde without fuel was 90 tons, and

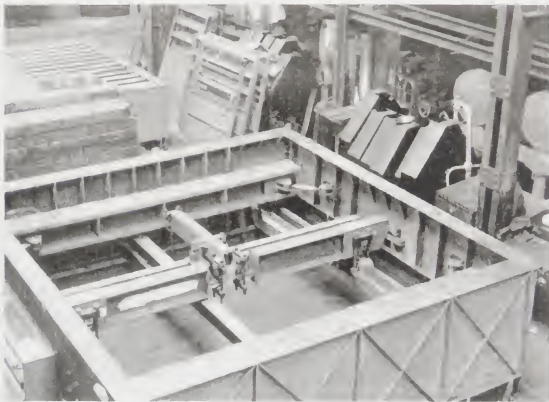


Figure 1. 1. One of the Brabazon weighbridges under construction at Avery's.

the maximum take-off weight was 182 tons. The four Olympus 593 turbo jet engines were mounted in paired nacelles beneath the wings, each engine producing 35,000 lbs thrust, so the four engines together could deliver enough power to propel a 40,000 ton ocean-going liner. The maximum speed was 1450 mph, more than twice the speed of sound. On westbound flights the aircraft would race the sun, so that leaving London at 9am local time you would be in New York around 7am local time.

Conventionally, the largest aircraft are ranked by weight, particularly take-off weight. On this score the largest aircraft in the world is the Antonov An-225 with a maximum take-off weight of 1,320,000 lb, which also holds the world record for the largest mass lifted by a plane at an altitude of 6500 ft.

Notes:

With thanks to Ken Govier, Alan Buckle and John Doran.

Figure 2.  One of the Brabazon weighbridges being tested. Each of the blocks is a one-ton weight.



Figure 3.  The Anglo-French Concorde 002 being weighed at Filton in 1968.



More Interesting Scales in UK Agricultural Museums

BY MIKE SHARPE

Peter Laycock's article in EQM No 3 2008 (pp3401-3) on the very interesting Anschütz large pendulum farm scale reminded me that I promised to write up some interesting finds from Brook Agricultural Museum, near Ashford, Kent, England (where my wife Tricia and I live).

Not having much space at home, I'm the sort of 'collector' who lets local museums do the hard work of displaying and maintaining interesting artefacts, so long as I can pop along every now and then to look, photograph, or sometimes clean and dust the items.

The Trustees of the Brook Agricultural Museum kindly allowed me to do some volunteer cleaning and cataloguing of their weighing and measuring exhibits, from which I started two or three lines of ongoing research. The curator, Brian Wimsett, was very interested in learning about some new aspects of his displays. He also has school groups visiting the museum on a regular basis, so the knowledge we put together can be passed on to younger generations.



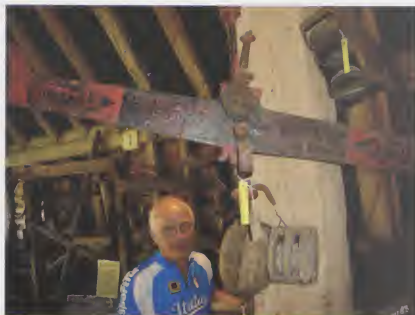
Fig. 1. //

The Museum is situated in a group of historic buildings in a rural area, consisting of a 14th century barn and a 19th century oast house and cottage. It has a large collection focusing on English farming techniques since the Middle Ages. From this collection, which includes some very large exhibits, I was able to identify over 40 items in categories relevant to EQM readers, then photographed and constructed a written database for future reference.

Most ISASC members will be familiar with the shop scales and butchers' steelyards which fitted nicely in the section dealing with the 'domestic' side of farming. The names on the many cast-iron weights included, of course, Avery and Kenrick, and their denominations of 56 lb and downwards harked back to an Imperial age.

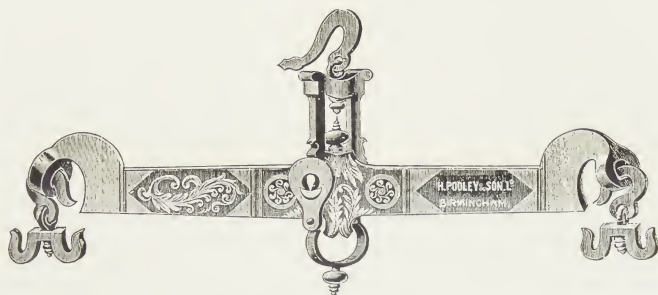
Fig. 2. //

More remarkable were the 24 inch turnover type steelyard to weigh 185 lb stamped 'T Beach Birmingham' and the Marriott Circular Spring Balance to weigh 330 lb / 42 stone, implying the use of the 8 lb stone for livestock or meat dating mid-18th and mid-19th centuries respectively.



The provenance of museum items is, as Mr. Laycock illustrated very aptly, usually well-established, and the group of items coming from a small flour mill in Temple Ewell near Dover was very instructive – a set of 3 wooden grain measures (Fig. 1) (Half gallon, Gallon and Half

No. S 303



Square End Weigh Beam.

Beam to weigh ...	...	...	...	2 cwt. 3ft. 0in.	3 cwt. 3ft. 3in.	4 cwt. 3ft. 6in.	5 cwt. 3ft. 9in.	6 cwt. 4ft. 0in.	8 cwt. 4ft. 3in.	10 cwt. 4ft. 6in.	12 cwt. 4ft. 9in.	15 cwt. 5ft. 0in.	20 cwt. 5ft. 6in.
Length of Beam ...	...	...	...	...	...	...	...	...	...	...	...	...	...
1st quality ...	...	...	...	...	144/-	180/-	216/-	270/-	318/-	396/-	468/-	570/-	810/-

Fig. 3. / /

Bushell (sic)) bearing the pre-1887 Maidstone verification mark; plus balance beam scales and trolley sack scales for weighing the bagged flour¹.

The 52-inch balance beam-scale (Fig. 2) is painted with the name of the owner (A Stanley & Sons, Ewell Mills) and also with 'Chaney & Co, Ltd Ramsgate' who were the suppliers. I considered whether this offered evidence of Chaney's as manufacturers of this hefty piece of ironwork. On consulting the 1907 Henry Pooley catalogue, I noticed a striking resemblance to Pooley's S 303 beam (fig. 3), especially in the snake-figure central load hook. I am, therefore, tending towards the view that Chaney's may have obtained the original beam in its unfinished state from Pooley, and then carried out the fine adjustment and own-branding before having it Government stamped and supplied to Stanley at Temple Ewell Mills.

Most unusual in the collection was the 'Viameter' or measuring wheel reading up to 12 miles subdivided by chains, apparently made as a high precision instrument in the late 18th century by Nairne & Blunt of London. This is a true scientific instrument of the Age of Enlightenment, perhaps used for road measurement or land parcel surveying.

Reference:

1. Watts, Martin (1983) *Corn Milling*; Princes Risborough: Shire Publications – photo and description on page 29.

Author's Biography:

Mike Sharpe was an Inspector of Weights and Measures in England and Wales for 23 years. During this time he was fortunate enough to meet Bob Holdaway, who encouraged him to join ISASC in 1991. Mike now resides in South East England with his wife Tricia, with whom he shares a life of innocent merriment.

Old European Letter Scales & Their Postal Rates

BY REIN KOK

On the widely known Waterloo Square Market in Amsterdam, a friend of mine found a nice Dutch letter scale. He bought it for the price of €10.00. The scale was a complete one and all parts of it were original. I was interested in this scale and I traded with him for a carat weight-box.

The scale was an old and special one (figure1). It had a strange weight-indication I had never seen before. Usually in Western-Europe, the weight-indications are in 'grams' and 'kilograms', but this time they were in 'wigties' (figure 2). After some research, I found out that 'wigties' were the same as 'grams'. This old indication was used before the year 1870. At that time the Postal Services in the Netherlands were under the jurisdiction of the Ministry of Finance. The postal rates were prescribed by this Ministry and depended on weight and distance. Beginning the 1st of September 1850 these rates were:

WEIGHT	DISTANCE	RATES
15 Wigties	0 - 30 KM	5 Cents
15 Wigties	30 - 100 KM	10 Cents
15 Wigties	Over 100 KM	15 Cents
15 - 30 Wigties		2 x the rate
31 - 50 Wigties		3 x the rate
51 - 100 Wigties		4 x the rate

Another strange thing on the dial is the letter 'E' instead of the '15' indication (fig.2). With the help of André Sol (a Dutch letter-scale collector) this problem was solved. The letter 'E' means 'Enkel' (= single); letters up to 15 wigties (grams) were considered as 'Enkel'. The postal-rates in that case were 5 cents. Letters between 15 and 30 wigties cost 2 x that rate, etc.

The frame and pointer of this letter-scale are of cast iron. The dial, hanging pan and hook are made of brass. In the window of the pointer is a thin thread for correct indication. The scale is 285 mm tall and the dial is graduated up to 100 wigties. In all probability, this scale is the oldest Dutch letter-scale known.

In my collection is another letter-scale of the same type (fig.3). It's a French one; on the dial is the word "grammes" (fig.4). The scale is graduated to 250 grams. The weight graduations are special: at 10-20-30 grams, the stripes are over the full width of the dial; at 5-15-25 grams over half the width, and at 7½-(15)-22½-(30)-37½ grams, etc over two-thirds of the width (fig.4 and 5). Normally these stripes are only at 5 - 10 - 15 grams-graduations, etc. Why are there 7½ - 22½ - 37½ gram graduations, etc?



Figure 1. ▲▲

Figure 2. ▼▼

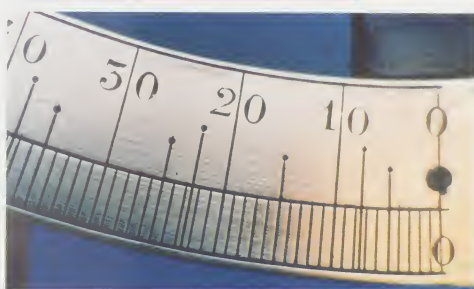




Figure 3.
 Figure 5.



Figure 4.



The 'port' at that time was a basic-unit-rate, a relic of the Napoleonic era. In 1849 the 'port' was replaced by 'centimes' (the year of the first use of the French stamps). Later on, in 1862, the $7\frac{1}{2}$ gr indication was replaced by '10 gr', but for Great Britain the $7\frac{1}{2}$ gr indication continued until 1875.

On the 14th of June 1833, an agreement was made between France and Great Britain on the postal-rates. This agreement was effective until 1875 (foundation of World Post Union). The postal-rates of this agreement were:

WEIGHT	RATES
$7\frac{1}{2}$ grams	1 port
$7\frac{1}{2}$ - 15 grams	$1\frac{1}{2}$ ports
15 - $22\frac{1}{2}$ grams	2 ports
$22\frac{1}{2}$ - 30 grams	$2\frac{1}{2}$ ports
every $7\frac{1}{2}$ grams more	plus 1 gram



Figure 6.

This letter-scale has the same measurements as the "wigjes-scale" (fig.6, right). It dates from about 1870. The makers of these scales are unknown. In the opposite direction (Great Britain to France) were also different postal-rates. On both British letter-scales (fig.7 and 8) the weight-graduations are $\frac{1}{3}$ oz and $\frac{2}{3}$ oz for France. These rates were valid from 1869 until 1875. The rates were:

WEIGHTS	RATES
$\frac{1}{3}$ ounce	3d
$\frac{2}{3}$ ounce	6d
1 ounce	9d
every $\frac{1}{3}$ ounce more	plus 3d



Figure 7. //



Figure 8. //

So both British letter-scales are about the same age as the French one.

To be a First Timer

BY CHARLES SMITH

Of all the scales about which I have seen or read, the use of this scale has to be the most unique.

It all happens in the little village of Pickwick in southeastern Minnesota. Pickwick is located on the downstream shore of Lake LaBelle. Here also is located the oldest industrial site in the state of Minnesota, the Pickwick Mill (Figure 1) built in 1854.

Figure 1. // The Pickwick Mill. Photo compliments of www.PickwickMill.org.

The lake supplies water to turn a large, twenty feet in diameter, wooden water-wheel. This water is the only source of power to the mill; therefore, it is critical that the water level in the lake remains constant. This level is maintained by gates which are raised and lowered manually. A scale was used as a water monitor.

As I was helping in restoring the mill, I noticed this scale (Figure 2) among some old obsolete discarded mill machinery. I also noticed wires were protruding from the scale stand. I recognized it as a Fairbanks, table model, crowfoot grocer scale with a single brass beam graduated zero to 3 pounds. Having an interest in scales, I inquired as to how it was used in milling grain. I was fortunate and located some 'old timers' in their 80s who confided that it was their 'rain gauge'.



Figure 2. //

You must realize that Pickwick and Lake LaBelle are situated at the lower end of a large valley with a vast watershed. During heavy rains the water level in the lake will rise rapidly, necessitating the raising of the dam gates to allow the water to flow out on its way to the Mississippi River, about 2 miles downstream.

The operators of the mill incorporated the scale into an alarm system to notify them of heavy rains so they could raise the gates. They attached a low voltage DC transformer with a set of contact points to the scale stand. They powered the transformer with a 6 volt dry cell battery, which sent power to a six volt buzzer located in their residence, which was adjacent to the mill.



Figure 3. A saucepan, or similar container like this red tub, which fills with rainwater on top of the scale acts as weighted trigger for a buzzer so that the miller knows when to open the gates.

An eight inch saucepan (Figure 3) was placed on the scale pan, and when a predetermined mass of rainwater entered the saucepan, the scale would assume the loaded position. The closing of the contact points activating the buzzer.

The scale has been reconditioned, fitted with a new battery and buzzer. It is now on display in the mill museum.

Notes:

<http://www.pickwickmill.org/>

Author's Biography

Charles Smith joined the Navy in 1942 during WW II and was serving as a Chief Aviation Machinist when he retired in 1962. Upon his retirement he bought a nursery and greenhouse where he specialized in tree and flower growing. He has been a member of ISASC and Pickwick Mill Board for 20 years. He was a member of the Goodhue City Council for 14 yrs, and served on the Winona County Board for 8 years where he was chairman for 6 years. He has been married to his wife Marie for over 60 years and they have numerous grandchildren and several great grandchildren.

Showcase

This wooden egg testing scale was made in Canada circa 1900. A lead counterpoise, affixed to the beam, balances a 2 ounce egg placed in the depression at one end of the beam. A wire pin forms the fulcrum.

This scale is on display and is part of the scale collection in the Avery Historical Museum at the Soho Foundry in Birmingham, England.



Weighbridges Made by John Wyatt & W&T Avery Ltd

BY KEN GOVIER

The infectious enthusiasm of ISASC (EUROPE) member Jack White for heavy load weighbridges made by W&T Avery Ltd prompted me to explore the origins of these weighing machines and to determine whether Avery's had any involvement with their early development. What I found is embodied in this article.

The Turnpike Act of 1741 authorised Road Trustees to raise funds for road maintenance through tolls based on the weight of passing wagons. This act and increasing traffic from the burgeoning Industrial Revolution created demand for a more efficient means of weighing wagons and their loads. At that time the method used involved unhitching horses, fixing chains and then weighing the wagon and load on a large steelyard; this process was both a tedious and time-consuming process that was becoming more so as load weights increased (Fig 1).

A weighing platform at road level that would facilitate a roll on/roll off system of weighing [a cart] the need to unhitch the horse (who would stand clear of the weighing platform) seemed the ideal solution. The problem was that available weighing techniques could not provide an accurate measurement of randomly distributed weight over the weighing surface that would occur as loaded wagons were manoeuvred into different positions on the weighing platform.

John Wyatt, born 1700 near Lichfield, England, was a master carpenter and inventive man who worked on a number of ideas for improving industrial machinery - yarn spinning and file cutting machines were two of them - came up with a solution to the cart-weighting problem, apparently while languishing in a debtors prison! He conceived a compound lever system based on two 'V' shaped levers that transferred all weight from any position on

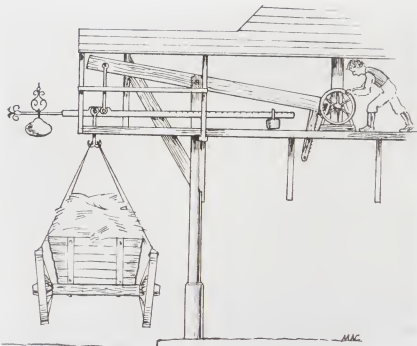


Figure 1 ▲ ▲ Loaded haycart being lifted ready for weighing on a large steelyard.

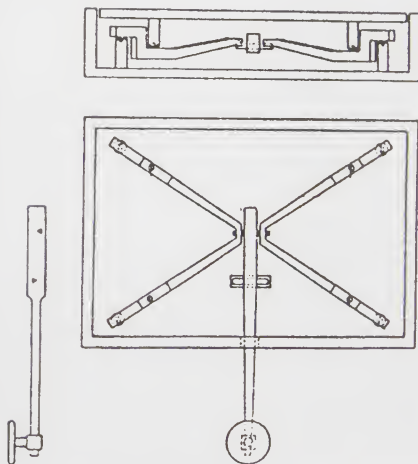


Figure 2 ▲ ▲ The plan, side and front elevation of John Wyatt's weighbridge.

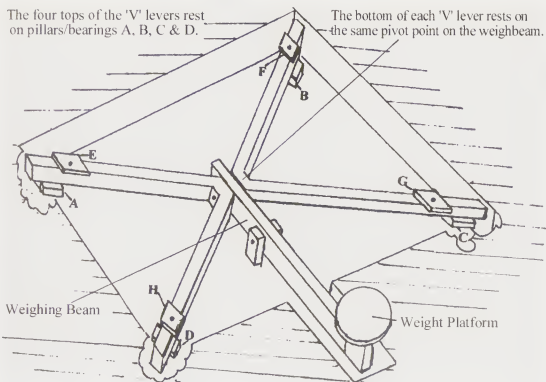


Figure 3. ▲▲ Perspective view of the compound lever system John Wyatt developed c1741. Illustrated here with the platform removed to reveal the mechanism sunk into a pit. When in position the weighing platform rests on bearings E, F, G & H.

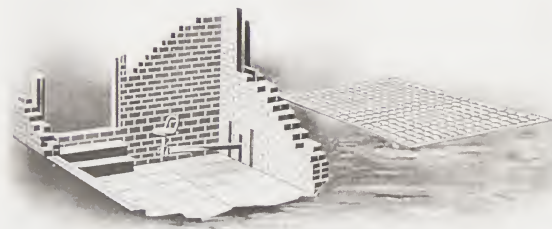
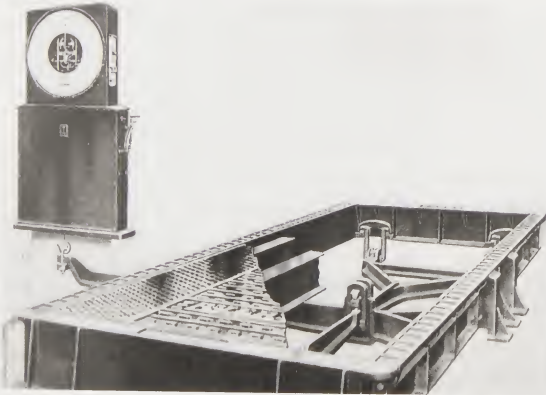


Figure 4. ▲▲ The proportional weight housing and extended weight platform on the weigh-beam of John Wyatt's compound lever weighbridge.



the weighing platform to a single point on the weighing beam – an essential requirement for accurate weighing.

The 'V' shaped levers were arranged so that they were horizontal with the point (bottom) of each 'V' resting at the same position on the weighing beam while the four lever ends (tops of the 'V') rested on pedestals at the four corners beneath the weighing platform. To support the weighing platform, four bearing points were fixed to the top surface of each of the four levers just 'inside' where the lever ends were supported (see Fig 2 and 3). This position not only gave firm support for the platform, it also gave the lever system considerable mechanical advantage that was further enhanced by the unequal arms of the weigh beam. Hence, relatively small, more easily handled proportional weights could be used on the weight platform.

The levers and weigh beam of Wyatt's weighing platform were sunk in a pit (Fig 4) that allowed the platform itself to be positioned exactly at road level while the weigh beam was extended well beyond the weighing area to leave this clear. The compound lever system and weigh beam arrangement is set out in Fig 2 showing the plan (front and side elevations) and illustrating more fully in the perspective sketch Fig 3.

Wyatt's design was a success, producing accurate results (weighing errors were reduced to approximately one pound per ton) and taking only one tenth of the time required to weigh loaded wagons using a large

Figure 5. ▲▲ Avery's Recorder Weighbridge. An exploded view showing the later 'Y' levers and swinger bearings.

steelyard. Between 1741 and 1744 he installed his first compound lever platform scale – now more commonly called a ‘weighbridge’ – in Snow Hill, Birmingham, where the revenue was used for the upkeep of the Workhouse (Public Institution for the poor and sick). Early documentary evidence of John Wyatt’s weighbridge construction operations indicates that he built a 6 ton capacity weighbridge in Liverpool in 1744. In his hand written instructions Wyatt states ‘...1 lb upon the scale is 20 lb upon the bridge...’ indicating that this particular compound lever

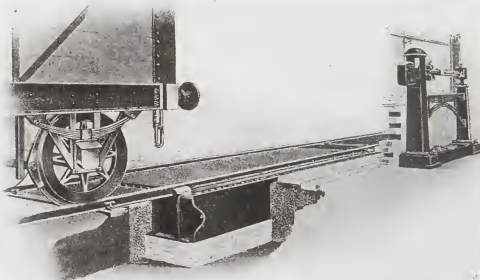


Figure 6. ▲▲ Avery’s railway track weighbridge.

system had a mechanical advantage of 20:1. As described later in this article, modern weighbridges have a much higher capacity and a greater mechanical advantage than Wyatt achieved with his 1744 installation. Sensitivity and accuracy were also to be enhanced to levels much higher than Wyatt was able to achieve in the 1740s.

Contemporary records indicate widespread use of Wyatt’s weighing platform (not necessarily built by him) throughout England, for apart from their use on roads, they were also set up adjacent to local markets for public use. The platforms performed well, and several are known to have been in use well into the 19th century: one built at Chester survived until 1868, and in Lichfield, a John Wyatt weighbridge remained in use until 1885. Even so, the public’s reaction to weighbridges was not always favourable, and it seems that in some cases revenues received were insufficient to recover the cost of installation (£100 in 1822) and the expense of operating them. It seems growth in the use of weighbridges was relatively slow in the late 1700s and early 1800s, but accelerated from the mid 1800s and onwards into the 1900s.

Exactly where and how John Wyatt’s weighbridges were made and the extent of his own business are not clear. By 1760 Wyatt was in severe financial difficulties (again), and he was taken on by Matthew Boulton at the Soho Manufactory near Birmingham. He continued working there until his death in 1766, but we do not know whether he was involved with weighbridges at that time.

While there is no definitive evidence that John



Figure 7. ▲▲ Weighbridge testing at W & T Avery’s Soho Foundry, c 1912. Alongside at middle left is a transfer lever resting on top of a ‘Y’ lever ready for the next job. These are typical of the castings used in constructing large weighbridges.

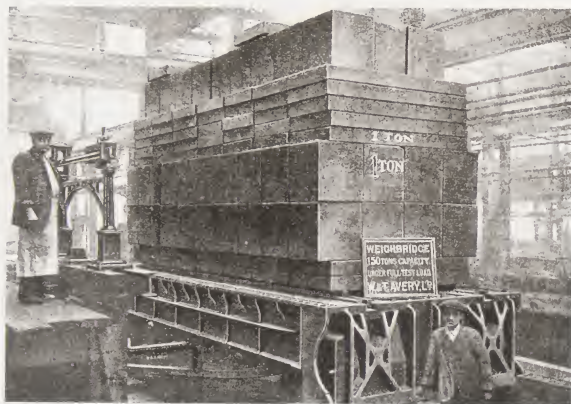


Figure 8. Final testing of a 150 ton capacity weighbridge c 1930.

Wyatt had a commercial relationship with forerunners of the Avery business, it is known that John Barton, a well-established Birmingham scale maker, inquired in 1744 about the commercial exploitation of Wyatt's Compound Lever Weighing Platform. John Barton is certainly a forerunner of Avery's, for Thomas Beach took over the Barton businesses in 1781 and, after some time and much intermarrying, the Beach business began to trade as W&T Avery in about 1815. Thus there could be a link between Avery's and John Wyatt though, as mentioned above, there is no evidence that this [link] developed into anything of a commercial nature.

Coincidentally W & T Avery Ltd acquired Boulton's Soho Foundry site (about a mile from his Soho Manufactory) in 1895 to meet growing demand for castings and to accommodate their expanding business. So both John Wyatt and W&T Avery Ltd operated in nearby locations, though chronologically they were 150 years apart.

The use of weighbridges grew slowly but steadily from 1744 onwards, and their installation was widespread. It is probable that the predecessors of Avery manufactured and installed weighbridges during this time. Avery's were certainly engaged in the manufacture and installation of weighbridges by the 1850s when it was recorded that...*they were also making a few weighbridges...* Certainly the post-1895 era saw increased activity in the weighbridge market, and Avery's increased their weighbridge manufacturing capacity at their Soho Foundry. Under William Hipkins influence (he was appointed managing director in 1895) ...*mechanisation at the [Soho Foundry] was further developed and trade extended, especially in weighbridges...*

There is no doubt that Avery's benefited from amalgamation with Henry Pooley & Son Ltd in 1914, for Avery's then acquired considerable expertise in the heavy weighing end of the market in which Pooley's specialised. It was Pooley's who made the first major change to Wyatt's compound lever machine with an improvement to the weight indication system. Imprecise positioning of the proportional weights caused errors in weighing and haphazard counting of these weights (often there were many of them) caused further errors. In 1833, Little, Bellows, Stevens & Reddington of Littleton, New Hampshire, USA patented in England certain improvements in the Wyatt design of weighbridge that gave accuracy and facility to the reading of weight. This was taken up by Henry Pooley & Son who installed their first modified weighing machine on the new Liverpool to Manchester railway line in 1835. Pooley's patented further improvements to Wyatt's design in 1847, including suspended pivots/knife edges, design of the steelyard and dial indication of weight. They went on to introduce further improvements that enhanced accuracy and reliability.

Over the years changes were made to Wyatt's basic design of compound levers, 'V' levers became 'Y' levers, bearings/pivots/knife edges were improved, enhanced lubrication of bearings was introduced and the loading/adjusting of proportional weights became more precise. Automatic ticketing for recording loads and charges was also introduced, and by the end of the 1800s, Avery's were weighing loads of around 100 tons.

Modern weighbridges can be of vastly greater capacity and much larger than Wyatt's of the 1740s. A very large one of 65 feet x 25 feet to weigh 100 head of cattle was supplied to Argentina in 1913 while one with a capacity of 200 tons was supplied to the Japanese Navy in 1925. The mechanical advantage of the lever system has been greatly enhanced and, due to high precision machining and positioning of the knife edges, sensitivity and accuracy have been vastly upgraded. Involvement with the weighing of heavy and unusual loads continued, and by the mid 1900s, loads of 200 tons were regularly being weighed on Avery's weighbridges.

Avery's weighing equipment was used for a number of interesting purposes. Perhaps the most interesting task presented to the Avery's technical experts was the weighing of the aircraft Brabazon and Concorde.

Avery's continuing involvement with weighbridge construction and installation is reflected in the following extract from their current advertising material.

Avery Weigh-Tronix Weighbridges-U.K.

Our weighbridge solutions are helping to monitor and control the movement of bulk materials across industry, in manufacturing, extraction, landfill and recycling applications.

We supply an extensive range of steel and pre-cast weighbridges, as well as pre-stressed concrete deck weighbridges, designed for long life and consistent performance and to bring down costs for owner operators. Our weighbridges can be pit or surface mounted, with ramps for easier access and each features our high-performance load cells for total reliability.

John Wyatt could hardly have imagined how his Compound Lever Weighing Platform would be developed to weigh up to more than 100 tons and the impact it would have on commerce. His solution of the 1741 cart weighing problem was certainly a major step forward in the evolution of weighing techniques.

Acknowledgements:

Information has been gathered from Jack White, Albert Rangeley, Norman Biggs and Michael Crawford's three articles on Early Platform Scales in EQM (pages 655-661, 692-699, 721-728) which have a useful list of references. The early history of Avery's (in particular the link with John Barton) was carefully investigated by Mrs Barbara M D Smith in the late 1960s. Her PhD thesis, a copy of which is available in the Birmingham Central Library, is a mine of valuable information.

Old Advert

This old advertising is actually a blotter for use on a desk. It measures 8 1/4" by 3 3/8" and dates from 1924-1934

DAYTON MONEYWEIGHT PORCELAIN SCALE
with the
"Easyread" Computing Chart

THE ACCOUNTANT IN YOUR STORE
 Comes a range of 46 pieces per pound and many more...
 Always carry either scale ready.

"THE MOST COMPLETE SCALE IN THE WORLD"

DAYTON SCALE COMPANY
 Division of International Business Machines Corporation
 50 BROAD STREET, NEW YORK, N. Y.

Represented by
 FORM 701

MADE IN U.S.A.

St Eligius in his (Goldsmith) Shop

BY ULRICH BIBER

The Painting

This beautiful picture, titled *A Goldsmith in his Shop*, possibly Saint Eligius, was painted in 1449 in Bruges, Holland. Commissioned by the Goldsmith's Guild of Bruges, it is painted on an oak panel with egg tempera and oil. It measures 38.5" (1 metre) by 33.5" (86 cm), and it is today part of the collection from the Metropolitan Museum of Art in New York.

Eligius, in the center of the picture, wears a bright red robe. Though he is in the process of weighing and the young lady is obviously demanding something from him, his withdrawn look is directed through the window into the far distance. Sitting at the table in his shop, he holds a gold scale with the left hand.

The particular way of holding the scale shows his experience in handling such an instrument. On the table in front of him are nesting weights with some of the small inserts removed and a few coins, (some randomly some in a pile), and on the right stands a convex mirror. We, as the viewer of the scene, are given the opportunity to look out of the window. There we see a place, surrounded by houses, with two men talking to each other. The one on the right carries a falcon.



At the right side of the Saint stands a magnificently dressed young aristocratic couple. They seem to be engaged, a fact which the intertwined ribbon on the table in front of them could symbolize. Embracing the young lady with his right arm, the young man looks at her hand. It is outstretched for a ring, which the Saint holds in his right hand, ready to be weighed. The goldsmith's offered goods are displayed on a shelf to the left of Eligius (on the right in the picture): goblets, necklaces from pearls, a coral branch, and other pieces of jewelry.

The Painter

Petrus Christus was a Flemish painter. He was born about 1410 / 1420 in Baarle. In 1444 he became a freeman of Bruges, where he very likely also died in 1472 or 1473. His teacher was Jan van Eyck. When van Eyck died in 1441, Christus took over the workshop and greatly influenced other, later Masters of the school in Bruges.

His religious paintings did not measure up to van Eyck. On the other hand, his portraits, recognizable by a static sobriety, have a strong physical expression and are full of character

and life. He creates this effect by concentrating on a few, very pronounced facial features. The backgrounds of the portraits are miniaturized real spaces; they are no longer undefined. Petrus Christus was one of the first Flemish painters who was intensively engaged in portraits. Only six of his works can be safely traced back to him based on his signature (Petrus XRI).

Saint Eligius

Eligius (Latin: The Chosen, also Eulogius; French: saint Éloi) was born about 589 AD in Chaptelat, north of Limoges, France. He died on December 1, 659 or 660 AD in Noyon, France. His Saint Day falls on the day of his death, December 1. Eligius learned the trade of a goldsmith from Abbo in Limoges. He was recommended to the treasurer of the French King Chlothar II (584 to 628 AD), residing in Paris. In recognition of his performance, the King appointed Eligius Treasurer and Master of the Mint at the Merovingian Court. Even after the death of Chlothar's successor King Dagobert (628 to 638 AD), Eligius was a highly respected and indispensable advisor at the court. In his later life he founded churches and cloisters (Solignae, Paris and others) and paid for slaves and prisoners of wars to be freed. After Dagobert's death, Eligius left the court in 639 AD, was ordained, and in 641 AD nominated Bishop of Noyon at the Oise.

An endless listing of trades claim Saint Eligius as their Patron: metal worker, goldsmith, engraver, mint master, polisher, locksmith, blacksmith, gunsmith, sword-cutler, watchmaker, lamp maker, miner and tinsmith, farmer, servant, coachman, veterinarian, farrier, horse trader, harness maker, carriage builder and wheelwright. Since the 17th century he is also patron for horses (Eulogius Ride in Bavaria).

Eligius, the patron for inspectors of weights and measures.

António Cruz describes in his book the special task of the guild of Saint Eligius in Portugal. In Lisbon existed a very peculiar situation: the time of its origin is unknown. The task of sealing was given to a society of silversmiths, the guild of St Eloy (Saint Eligius). In a decree from August 1460, King Alfonso V (1438 to 1481 AD) granted the members of the guild the right to be judge and also to calibrate scales and weights in Lisbon. The privilege of the guild to be a sealer was not revoked until May 1861 with the introduction of the metric system.

On March 27, 1942, the general assembly from the Associação de Socorros Mútuos dos Ourives de Prata Lisbonenses (Mutual Help Fund of the Silversmiths of Lisbon) made a resolution on the remaining items of the heritage from the guild. They donated these to the Museum of Weights and Measures in Lisbon, which is today the Museum for Metrology.

References:

www.wikimedia.com

www.metmuseum.org search word: Saint Eligius.

www.all-art.org search word Petrus Christus.

CRUZ, António: *Pesos e Medidas em Portugal*; Weights and Measures in Portugal; Mass und Gewicht in Portugal, Caparcia (Portugal), 2007, ISBN 978-972-763-098-1, S 110 ff. (see for listing: ISASC website – International News – literature)

Note:

The above article is based on a German publication by Ulrich Biber in the magazine *Mass und Gewicht*, issue 88, Dec. 2008. The translator, Utz Schmidt took the liberty to write the following about his friend.

Author's Biography:

Ulrich Biber lives in Germany, just 40 miles south of the border to Denmark. He is a born Schwabian, part of those thrifty people who expelled others we know as Scots—because they had been too wasteful! The result is his marvelous collection of old veterinarian instruments, weights and scales, mostly for the measurement of grain. In 1992 he joined "Mass und Gewicht" (Association for Metrology) and became secretary in 2003. Two years later he was able to retire as a veterinarian and now spends the major part of his time on the editorial team for the various publications of the society.

The Chicago Scale Company

BY JAN BERNING

William Washburn Nutting was born in Westminster, Vermont, (VT) on August 5, 1832, and attended school at Westminster, VT as well as academies at Saxons River, Chester and Ludlow, VT and Walpole, New Hampshire, then taught school in Jamaica, VT in the winter of 1850 to 1851 and in Chester, VT during the winter of 1851-1852. In April of 1852, he became a member of the Safford and Nutting General Store in Westminster, VT, he bought Safford, out in October of 1853 and, at the same time, established another store at Westminster West, 6 miles from the first store. He ran both stores until spring of 1856 when he sold out and moved to Des Moines, Iowa, where he worked in the real estate business until July of 1857. He married Mary J. Campbell in September 1858 at Putney, Vermont. The couple moved to Minneapolis, Minnesota, where William was employed in the mercantile business until 1861. They had a son John C. born in 1859 and a daughter Helen C. The family moved to Chicago where Nutting was a grocer from 1861 until March of 1863 when he established the Chicago Scale Company of which he was president through at least 1917¹.

Frank S. Allen was born in Providence, Rhode Island on April 4, 1836, and received his education in the high school of that city. In October, 1856, he came to Chicago, but afterward went to McHenry County, where he clerked in a general store for two or three years. Allen returned to Chicago in April 1861 and enlisted in the military where he served in various companies until after the war ended, being mustered out as a Lieutenant on December 28, 1865. He then returned to Chicago and became interested in the Chicago Scale Company of which he was treasurer until at least 1886².

Thomas Moriarty Jackson was born in Boston, Massachusetts, on February 15, 1861. He married Helen Nutting on September 28, 1884. They had three children Marion, Helen & Elsie. He began his career as a draftsman employed by J. M. Van Osdel, architect and was subsequently employed by J. M. Adsit, a banker whose business was the nucleus of the Chicago National Bank. When the Chicago National Bank was organized he became a clearing house clerk and advanced to cashier, remaining until the Bank closed [in 1905]. He served as treasurer and manager of Chicago Scale Company until his death on August 4, 1915. He also served as

Fig. 1. / This ad for the 'Little Detective' was handed out to potential customers in the late 1880s or early 1890s as evidenced by their address at 149 & 151 So. Jefferson shown on the ad. The original size of this ad is 12" by 4 1/4".

THE
"LITTLE DETECTIVE."
No More Short Weights.
A \$10.00 SCALE FOR \$3.00.
MANUFACTURED BY
CHICAGO SCALE CO.,
 149 & 151 So. Jefferson Street.
 CHICAGO, ILL.
FOR FAMILY, OFFICE OR STORE.
 Weighs from 1/4 oz. to 25 lbs.



This Style for Housekeepers and Offices . . . \$3.00

This little Scale is made with Steel Bearings and Brass Beam, and will weigh accurately any package from 1/4 oz. to 25 lbs. It is intended to supply the great demand for a House-keeper's Scale. Nothing of the kind ever having been sold before for less than from \$5 to \$10. Every Scale is perfect and will last a person's life-time.

It is also valuable in every Office for weighing Mail Matter. There is no better Scale made for Postmasters, as it is as nicely adjusted as any Letter balance.

Merchants and Agents find this Scale one of the best selling articles in the market, and not to be compared to the worthless Spring Scales that have been hawked about the country.



With Platform, Tin Scoop and Balance Weight . . . \$3.50

With Platform, Brass Scoop and Balance Weight . . . \$3.75



With Platform, Brass Funnel Scoop and Balance Weight . . . \$4.25

For Housekeepers and Offices this Scale is furnished without a Scoop, and for the benefit of stores we furnish the Scale with Scoop at prices given underneath each style.

The demand for the "Little Detective" Scale has been so great that nearly 10,000 have been sold within a few months.

Every Scale is thoroughly tested before leaving the Manufactory, and anything that is found imperfect may be exchanged, or the Scale returned and money refunded.



With Horn and Tin Scoop . . . \$5.25

With Horn and Brass Scoop . . . \$5.50

Over 300 other varieties of Scales are manufactured by the CHICAGO SCALE CO., including Counter, Platform, Dorrant, Hopper, Hay, Stock and Railroad Scales, all of which are equal to the Best in Quality and much lower in price.

The Premium Wagon Scale of the World.

2-Ton platform, 6x12 . . . \$40 00 3-Ton platform, 7x13 . . . \$ 50 00

4-Ton " 8x14 . . . 60 00 5-Ton " 8x14 . . . 75 00

6-Ton " 8x16 . . . 90 00 6-Ton " 8x22 . . . 110 00

Full Price List sent free to any one. All orders promptly filled.

For Sale by . . .



Figs. 2 & 3
Details of the beam of the scale shown on the cover. The brass beam is graduated to 1 1/2 pounds by 1/4 ounce. The scale has a total capacity of 25 pounds.



treasurer of Northwestern Gas Company and Director of Oakwood Cemetery until 1907¹.

Documentation confirms that the Chicago Scale Company was founded by William Washburn Nutting in Chicago, Illinois, in March of 1863. It is not known what caused Nutting to go into the scale business, but his father may have had some influence in his decision. Information found in an 1862 publication tells us that Silvester S. Hitchcock² made scales in Chicago that were *manufactured with his improvements, on the principle of Fairbanks and have been awarded 134 first premiums over all other scales by county, state, and United States Fairs held in New York, Ohio, Illinois, Wisconsin, Michigan, Indiana, also in the British Provinces in direct competition with Fairbanks...* Mr. Hitchcock has recently admitted as a partner Mr. H. Nutting³. Hitchcock remained in business, in Chicago, at least through 1864.

As early as 1864, evidence shows that, Chicago Scale Company began making its name known throughout the United States. Chicago Scale Co. donated a scale valued at \$30 to the North-western Soldier's Fair held in Chicago, in October-November of that year⁴.

In the 1880s Chicago Scale widely marketed their scales in many different periodicals of the time. Advertisements have been seen in issues of *The Cambrian* from 1882-1883, *Unity* from 1883-1885, *The Educational Courant* from 1884-1885, *Prairie Farmer* from 1884, *Scribner's Magazine* from 1887, *Women's Work and Overland Monthly* from 1888, *St. Nicholas* and *Lippincott Magazine* from 1889 and *Primary Education* from 1896. They also had a full page ad in the *Illustrated History of the Union Stockyards*. In addition, a 1919 issue of *Printers' Ink* states the following: *The Win H. Rankin Company of Chicago has added the Chicago Scale Company of the same city, to their list of customers and are now preparing a national campaign for this account*⁵.

Other marketing efforts of Chicago Scale Co. included fliers advertising their scales, as well as shows at the Agricultural Societies in several states. In 1869-1870 the company was awarded a Silver Medal for Best Hay & Cattle Scales for farm use by the Illinois State Agricultural Society⁶, in 1884 they exhibited stoves, sewing machines, and scales at the Illinois Agricultural Society,⁷ and in 1885 they were awarded a diploma for the best display of counter scales by the Wisconsin State Agriculture Society⁸. Eighteen hundred ninety-three brought The World's Fair, Columbian Exhibition to Chicago, and thus Chicago Scale Co personnel handed out fair maps with color or black advertisements on the front. They also had displays at the Wisconsin and Ohio State Agriculture Society fairs in 1896, Wisconsin in 1905 and Minnesota in 1910. The latest evidence

DOWN WITH HIGH PRICES.

CHICAGO SCALE CO.

151 S. Jefferson St., Chicago.

The "Little Detector" 1/2 oz. to 25 lbs., ss. Should be in every House and Office.

240-lb. Family or Farm Scale, \$5.

Special prices to Agents and Dealers, 50 different sizes and varieties, including Counter, Platform, Hay, Coal Grain, Stock and Mill Scales.

2-Ton Wagon Scale, \$118, \$40;
3-Ton, 72 lbs. \$50;
4-Ton, \$54, \$40.

Beam Box and Brass Beam Inclosed

Farmers' Portable Forge, \$10.

Forge and Mill of Tons \$2.
All Tools needed for Repairs.
Saw, Vices, Hammers,
Tongs, Drills, Believers, etc.

All Kinds of Blacksmith Tools,
And hundreds of useful Articles
Retailed less than Wholesale
Prices. Forges for all kinds of
shops, Food-Power Lathes, and
Tools for doing repairs in small shops.

Improved Iron Corn-Shearer.
Weight, 180 lbs.,
PRICE, \$6.50.
Sheels a Double a minute: Fanning
Mills, Feed Mills, Farmers Feed Cooker,
&c. Save money and send for circular

**A \$65
Sewing Machine
For \$18.**

Drop-Leaf Table, Five
Drawers, Cover Box and
Attachments. Buy the
Best, Newest and Best.
Machines Warranted, give
direction. Thousands sold, so
to all parts of the Country.
SEND FOR FULL PRICE LIST.

Fig. 4. Advertisements like this appeared in issues of *The Cambrian* of 1882 and *The Educational Courant* of 1883-1885. They marketed some of the other items sold by the Chicago Scale Company.



Fig. 5. This small ad for the 'Little Beauty' appeared in a July 1888 issue of *Woman's Work*.

of a display was found in the February 1922 *Journal of the National Education Association* which reads in part "...Be sure to visit the booths of the Continental Scale Company, Fairbanks, Morse & Company and the Chicago Scale Company where will be displayed complete lines of portable



Fig. 6. Cast into the plate of this 'Little Detective' is *The Rural New Yorker*. Scales like this may have been given to advertisers or to people who sold subscriptions.



THE "LITTLE DETECTIVE."
No More Short Weights.
A \$10 SCALE FREE!
Weights from 1/4 oz. to 4 lbs.



PERHAPS

You did not succeed in getting a scale, then turn to our offer, and there is some more of the celebrated "Little Detective" scales than have been sent to delighted customers. If not, they are made for you.

TRY AGAIN

and now they are made with a still more liberal offer, which is to grant the use of the celebrated "Little Detective" scales, second choice, if you will secure only

SIX SUBSCRIBERS

for the "Racine Agriculturist" at fifty cents each, and to be returned three dollars. Please request of the Editor of the "Racine Agriculturist" Watch for eight notices there also sent you.

The "Little Detective" Scale is made with steel, brass and good glass, and will weigh accurately as long as you use it. For the first time, it is supplied to the demand for a household scale. Nothing of the kind has ever been so successful, from first to last. Every Scale is perfect and will last for years.

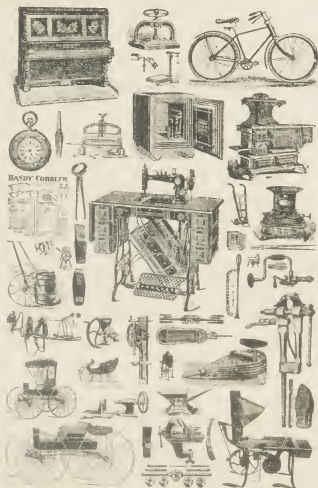
The scale is made in every form for weighing Mail Matter, Food, etc. It is made in every form for Postmasters, as it is made in every form for every business.

Send for sample scales, we will put your name on our secure list, and you the paper free for a few months, so that you will be supplied, if you will agree to get subscribers for it.

THE RACINE AGRICULTURIST,
RACINE, WIS.

Fig. 7. The front and back of an ad card from *The Racine Agriculturist* offering a free 'Little Detective' scale for selling subscriptions.

Thousands of Specialties Sold Direct to Consumers
AT LESS THAN WHOLESALE PRICES.



Sewing Machines from \$9 to \$18. Other Things in Proportion.

Fig. 8. This folding ad card was given out at the Columbian Exhibition in Chicago in 1893. The back had a map for use as a guide to the World's Fair grounds. Chicago Scale Co. advertised that they sold direct to customers. This card has been seen in color.

and stationary scales for schools...

About 1892 Chicago Scale issued a Reduced Price List catalog with bright pink covers tout-

Fig. 9. This little booklet, dated 1898 contains illustrations of American Wars from Lexington to Santiago. It reads *Compliments of Chicago Scale Co. 292, 294 and 296 Jackson Boulevard, Chicago, ILL.* The booklet measures 5" by 3 1/2" and has 16 pages. The back reads *The diploma and gold medal were awarded Chicago Scale Co. for Best Hay or Stock Scales at the Trans-Mississippi International Exposition, at Omaha, Neb., 1898. They were the official Stock Scales at The World's Fair, Chicago, 1893. Every farmer should have his own stock scale. The best can be had at lowest prices. Scales of all varieties...*

Courtesy of James Reeve.

CHICAGO SCALE CO.

151 South Jefferson St. (near Adams)
CHICAGO, ILL.

U. S. STANDARD SCALES

OF ALL VARIETIES.



THE PREMIUM WAGON
SCALES OF THE
WORLD.

We sell thousands of useful Articles, saving our customers one-half or two-thirds their money.

AMONG THEM ARE THE FOLLOWING:

SEWING MACHINES, PIANOS, ORGANS, CARRIAGES, BUGGIES, HARNESSES, BLACKSMITH TOOLS, SAFES, GUNS, PISTOLS, STOVES, MILLS, LATHES, ENGINES, BOILERS, BICYCLES, LETTER PRESSES, CASH DRAWERS, TRUCKS, HAY CUTTERS, ROAD PLOWS, WIRE FENCE, ETC., ETC.

CALL OR SEND FOR OUR FREE CATALOGUES AND PRICE LISTS

—♦TELEPHONE. 4107 MAIN♦—

... CHICAGO SCALE CO. ...

UNCLE SAM'S WARS

FROM
LEXINGTON
TO
SANTIAGO



Compliments of
CHICAGO SCALE CO.
292, 294 and 296 Jackson Boulevard,
CHICAGO, ILL.

The Diploma and Gold Medal were
Awarded Chicago Scale Co.

BEST HAY OR STOCK SCALES.

At the Trans-Mississippi International Exposition,
St. Louis, Mo., 1898.

They were the Official Stock Scales at the
WORLD'S FAIR, CHICAGO, 1893.

No Pit
Required.

Best Quality.
Lowest Prices.

Every Farmer Should Have His Own Stock Scale.
The Best Can Be Had at Lowest Prices.

SCALES OF ALL VARIETIES,

INCLUDING
Railroad Track, Depot, Mill, Elevator, Ware-
house, Packing House, Dairy, Store
and Family Scales.

—♦SEND FOR FREE LIST AND ANY
INFORMATION WILL

their factory. Early in 1914 a representative of the A. C. McCord Manufacturing Company of Detroit, which owned the Mason, Davis Stove Company and the Chicago Scale Company, searched for the best scale man in the country. On March 11, 1914, Mathias Weber started his new job as superintendent in the Chicago Scale Company's plant at 7700 South Chicago Ave. McCord's brother-in-law E.C. Rowe was president¹⁶. Soon after that the business climate changed because WWI had started in Europe. Marshall Field's found its supply of European bathroom scales cut off and wanted the Chicago Scale Company to make a scale for them.¹⁷ Weber invented a new scale and named it 'Madaco', an abbreviation of Mason, Davis Stove Company. In 1919 Weber organized the Continental Scale Works, but that, as they say, is another story.^{18&19}

Notes & References:

1. Marquis, Albert N., ed. *The Book of Chicagoans: A Biographical Dictionary*. Chicago, IL: Albert Nelson Marquis, 1905 1911, 1917.
2. Andrews, A. T. *History of Chicago: from the earliest period to the present time*. Vol. III. Chicago, IL: AT Andrews Co, 1886.
3. Hitchcock was awarded three patents for improvements on weighing scales dated 1861, 1875 and 1879. He is known to have later associated with Des Moines Scale Company of Des Moines, Iowa. Only the first of his patents from 1861 was issued when he lived in Chicago, Illinois. During the period from 1875 to 1879 both patents listed his home as Des Moines, Iowa.
4. Guyer, Isaac D. *History of Chicago: Its Commercial and Manufacturing Interests and Industry*. Chicago, IL: Church, Goodman & Cushing, 1862
5. William W. Nutting was the son of Hiram and Lucretia Washburn Nutting.
6. United States Sanitary Commission, et al. *History of the Northwestern Soldiers' Fair*. Chicago, IL: Dunlop, Sewell & Spalding, 1864.
7. Grand, W. Jos. *Illustrated History of the Union Stockyards*. Chicago, IL: Thos. Knapp Pig. & Bdg. Company, 1896
8. "New Account for Wm. H. Rankin Co.," *Printers' Ink: A Journal for Advertisers*, 10 July 1919: 146.
9. Reynolds, John P., ed. *Transactions of the IL State Agricultural Society*. Vol. VIII-1869-1870. Springfield, IL: Illinois Journal Printing Office, 1871.
10. Fisher, S. D., ed. *Transactions of the IL State Agricultural Society*. Vol. XXII-1884. Springfield, IL: H. W. Rokker, State Printer & Binder, 1885.
11. Babbitt, Clinton, ed. *Transactions of the Wisconsin State Agricultural Society*. Vol. XXIII. Madison, WI: Democrat Printing Company, State Printer, 1885.
12. National Education Association of the United States, ed. *The Journal of the National Education Association*. Vol. XI. Washington, DC, February 1922: A-34.
13. Chicago Scale Co. Reduced Price List of all varieties of Scales. Chicago, IL: Chicago Scale Co., C 1892
14. Abbott, Arthur Vaughan. "Weighing - Machinery," *American Magazine*, Frank Leslie's Popular Monthly: July - Dec. 1886: 119.
15. Chicago Board of Education. Proceedings of the Board of Education of the City of Chicago. July 14, 1897: 411.
16. Lifshy, Earl. *The Housewares Story: A History of the American Housewares Industry*. Chicago, IL: the National Housewares Manufacturers Association, 1973.
17. Hanssen, Stan B. *Book of Scales*. Stan B. Hanssen, 2007.
18. Weber is listed in most references as Mathias C. Weber but all his patents were issued to Mathias J. Weber.



Fig. 13. Advertising cover from 1890. Courtesy of Jerry Neufeld.



Fig. 14. Ad cover from 1908. Courtesy Cliff Lushbough



A Balanced View

Well, here we are in 2009, ready for another year of continuing our search for special scales and weights. Dian and I have completed our trek to sunny Florida in order to escape the cold and snow of a northern winter. On our way we had another opportunity to spend a night with our good friend, Phil Wehman, in Chattanooga. You will recall Phil was the chairman and host of our very successful convention last year in Chattanooga. Following the convention, he decided to continue to promote ISASC and to generate interest in scale collecting in his local community. The *Chattanooga Times Free Press*, his hometown newspaper, wrote a very interesting article on ISASC, Phil and his collection. The article prompted him to share his collection with others and over a several week period he opened his house to his neighbors and to several service clubs. Several hundred people viewed his collection with a keen interest. They were unaware that one of the country's finest scale collections was right there in their home town. Congratulations to Phil!

On our trek south we stopped off at Mount Dora, Florida, to take in their "Extravaganza" antique show in the hope of finding a few scales. There we ran into ISASC members Ben Smith and Jim Dietrich who had arrived shortly before us and had already found a few treasures to add to their collections. Fortunately, they left a few for us and we came away with several new postal scales.

Election of Officers

The results of the election of officers are in. I am pleased to advise that Kurt Beyreis, Bob Jibben and Bill James received your enthusiastic support. They have been elected to the board for the following three year terms commencing June 1, 2009.

<u>Treasurer</u> , Kurt Beyreis	(June 1, 2009 to May 31, 2012)
<u>Vice President</u> , Bob Jibben	(June 1, 2009 to May 31, 2012)
<u>Vice President</u> , Bill James	(June 1, 2009 to May 31, 2012)

I am also pleased to announce Shirley Schmidt has agreed to join the board as Vice President to fill the term left vacant by Kurt Beyreis. Shirley has indicated she would like to run for election to the board upon the completion of that term.

Kurt will manage the financial health of ISASC as treasurer. Bob Jibben will be the board member for oversight and support of *Equilibrium*. Bill James will oversee conventions and provide support to the local convention committees and Shirley will take on the responsibility for membership.

Please join me in congratulating and thanking these four outstanding ISASC members for their willingness to participate in the future well-being of your society.

Upcoming Convention, Kansas City 2009

By now you should have received a convention registration package. If you have not already registered, I would encourage you to do so. The 2009 convention will be held May 15th through May 19th in Kansas City, Missouri. The Convention chairmen, Bob Jibben and Bill James, have gathered an enthusiastic group to help them plan and implement this convention. One highlight will be the chance to see the Schneiderman, Schott and Kelley collections. The ever popular “Silent Auction” and “Lets Make a Deal” continue to be the best opportunity to add quality scales to your collection. Certainly an opportunity not to be missed! The camaraderie prevalent at any convention is something that only increases the joy of collecting. I, and all the board members, encourage you to join us in Kansas City. For further detail, please take a moment to visit the ISASC website (www.isasc.org) to see the announcement for the Kansas City Convention (click on “Annual Convention” and then on “Invitation: Kansas City, May 2009”). I look forward to seeing many of you in Kansas City in May.

Convention 2010, Portland, Oregon

It is time to head back to the west coast. Portland, Oregon, has been selected as the city for our 2010 convention. Convention Chair Dick Clark, along with the convention committee, has planning well underway. I hear the month of May is a perfect time of year to visit this garden state. The hotel has been booked and an exciting program is being prepared. Included will be an opportunity to view some of the Northwest’s finest scale collections. Stay tuned for further details.

ISASC Website

Carol Hayden, our website manager, reports the following additions.

A revised, expanded, enhanced and updated "International News" has been added. ISASC member, Utz Schmidt, our International Information Officer, has undertaken this project with a view of providing our members with scale and weight information from several other international scale societies. He has started by including information from the German Society. Please take a moment to visit the website in the Members Only section under "International News". Click on 'Open Sesame' and you will be treated to a remarkably interesting piece of work. Utz plans to include other European societies. Thanks to Utz for the time, effort and expertise required to bring this new feature to us.

The Invitational Letter from the Convention Committee, Program and Registration Form for the Convention in Kansas City are now posted on the website under Annual Convention: Kansas City. There is also a link to the hotel in the write-up about the convention. At the top of the write-up there is a direct link to make your hotel reservations.

We have a new menu item on the Home Page titled "Current *Equilibrium*" which will be updated each quarter and features the current issue of *Equilibrium*. A few titles of articles selected at random are listed. Its main purpose is to help entice prospective members as to what sort of articles are currently being published in EQM. We do have a sample EQM on the website to look through, but this is a teaser for what is current. Members can use it to take a sneak peek of what is coming up in the newest edition of EQM.

The Euro Chapter of ISASC is now publishing their own newsletter and it is posted to our website for those interested in finding out what is happening with our sister chapter. It is posted in the Members Only section under "Euro Newsletter".

Welcome To New Members

I would like to take this opportunity to welcome the following new members and to encourage them to contact any of the members of ISASC should they have any questions.

Dave Ehrnschwender	Kansas City	MO	
Harry Hawley	Marion	IA	Jane

Robert Diaz

Argentina

Avery Scale Museum

Whenever you find yourself in the United Kingdom, a visit to the Avery Scale Museum is a must. Curator John Doran, I am sure, would be delighted to show it to you. It is located at the Avery Soho manufacturing facility that is well over one hundred years old. It is steeped in history, including the trying times it went through during World War II, when it was converted to manufacture armaments for the war effort. It was bombed several times during the war, but each time they picked up the pieces and continued the fight. The museum is located in Birmingham and is well worth a visit.



In Memorium

ISASC member Larry G. Pugsley, age 69, of Three Lakes, WI, passed away November 3, 2008. Larry was an active ISASC member since 1995, having attended several conventions and regional meetings with his wife Joan.

We look forward to the convention in Kansas City in May. Hope to see you there.

Peter Laycock,
President ISASC



EQUILIBRIUM

QUARTERLY MAGAZINE OF THE INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

2009 ISSUE NO. 2

PAGES 3461 - 3488



Cover Picture

Nareissé Briais (NB) is the most likely maker of this unmarked French pendulum letter scale. The Eagle sculpture is brass or bronze signed by A. Marionnet (1852-1910). The sculpture is affixed to a golden marble plinth under which there is a brass plate. The adjustment screw at the right goes through the sculpture, the marble plinth and the brass plate in order to level the scale.

The Eagle wings measure 9 1/4" from tip to tip, the base measures 6 1/2" wide by 4" deep and the scale measures 8 1/4" tall from the table to the top of the letter plate, which has been replaced. The scale has a capacity of 60 grams with the dial graduated by 5 grams.

For more on NB scales see the article on pages 3478-3482.

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Photos are best in 300 DPI Jpegs in a separate file with a maximum of 3 photos per Email.

A German Letter Scale (part 2)

REIN KOK

In part 1 (EQM 3379 – 3381) I wrote about this letter scale but in fact I knew much less about this scale. In the meantime that has changed. I got some reactions from my article and now I have much more information.

By coincidence, in *Maß und Gewicht* (Sept 2008), a patent of this scale was published by Ulrich Biber (Figure 10). *Maß und Gewicht* is the quarterly magazine of the German scale and weight collectors.

The patent (1885) was accompanied by two photos of this scale. On both scales were the names of Bischoff. On my scale (Figure 1, page 3371) this name was missing. Instead of the name was a serial number.

When writing part 1, I didn't know Bischoff was the maker of this scale. I supposed P.W. was the maker. But who or what was P.W.? Ulrich Biber thought these letters were an abbreviation of Post Waage (postal scale). But to me it seems improbable because between the letters P.W. is a dot. Later on Ulrich drew my attention to a

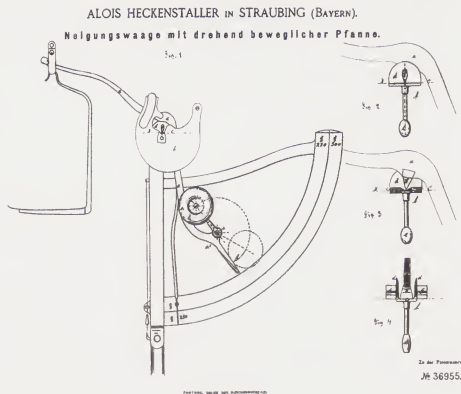


Figure 10. ▲ ▲



Figure 11. ▲ ▲

Bischoff scale on e-Bay. I bought this scale (Figure 11). It stands on a tripod with two adjustment screws. Under this elegant tripod is a butterfly-nut, so you can remove the scale from the tripod. On the top of the tripod is a small pin which falls in a small hole at the base of the standard (Figure 12). On this figure the standard is lifted a bit so that the pin is visible. In this way the scale always stands in the upright position on the tripod. Along the standard ought to hang a plumb-line, but this is missing. All parts have the same serial number (5713), even the butterfly-nut (Figure 12). On this scale the name of Bischoff is present. The graduation of this scale is the same as described in part 1. On the dial is a grey verification-sticker of 1983 (Figure 13) with a banderole. On the top of the scale (above the serial number 5713) is the same banderole but now verified until 1973 (Figure 14).

Jan Berning sent me a picture of a third type of this scale (Figure 15) with serial number 4392. Along the standard hangs the plumb-bob and on



Figure 12. / /



Figure 14. / /

this scale the name of Bischoff is also missing. The graduation on the dial has an interval of 20 grams. The tripod has three stretched legs with two adjustment screws. Meanwhile a German collector offered the same scale with serial number 3988. This one is very interesting; on the dial is handwritten *Bischoff's Wage, Vertr:K Börsch, München* (Figure 16) "Wage" is nowadays "Waage", VERTR = Vertreter = representative. Was K.Börsch the owner of this scale?



Figure 13. / /

Another reaction came from a Belgian member of our society. He sent me a picture of his Bischoff scale (Figure 17). Later on he showed me his scale at a meeting of our society. I took some pictures of this scale. The scale was stored in a wooden box which measured 39 x 25 x 8 cm. On the lid of the box is a hole in which you can put the scale (Figure 18). In front of this hole is a water-level and a small oval sticker with the words V .BISCHOFF – Werkstätte für Feinmechanik – MÜNCHEN. Questions: Who was V .Bischoff and who was R. Bischoff? Were they father and son or were they brothers? Has somebody a solution?



Figure 15. //

On the inside of the lid are two labels (Figure 19):

1. with a picture of the scale and how to store the scale in the box
2. with a list of the contents.

The arc indicates 0 – 120 and 0 – 250 grams to go with the poise when it is turned up or down. On the right side of the box lid is a second hole through which goes a key to adjust the scale. The serial number is 909 and this number is also punched inside the box. The hanging pan and key have been replaced.

Recently I received another Bischoff-scale with a dial graduated to 1 kg (Figure 20). On this one the name of Bischoff is also missing. It's the same model as Figure 11 and bears no. 4337. All parts have the same serial number. By cleaning the adjustment screws I discovered at the underside of the brass buttons a no. 37. These are the last two numbers of the serial number. The same number is on the top screw.

Coincidence.....? No!! On the underside of the screws on both other scales were the same last two numbers of their serial number. These numbers may also be found on the counter poises.



Figure 18. //



Figure 19. //



Figure 21. //



Figure 20. //

Figure 21 shows the three counter poises of Figure 1, 11 and 20. Their thicknesses are 22, 32 and 38 mm. The weight of the largest one is 900 grams and has a hole at the backside. It also shows no. 37 (Figure 22). At the underside of the hanging pan an iron strip (65x17x2 mm) is added (Figure 23). This probably happened at the workshop, where the scale was made, to adjust the scale. The brace and strip are fixed on the same way so it is not a later addition. The last calibration took place in 1922. The total weight of this scale is 4,2 kg.

As you see one publication can give us a lot of information.



Figure 23. //



Figure 22. //

A Short - Lived Scale with a Long Story - The Anchor Postal Scale

BY STEVE BEARE

I recently purchased a simple pendulum American postal scale [Figure 1]. It is stamped ANCHOR SCALE, undoubtedly because of its anchor-like shape. I was drawn to this rather ordinary scale because it is marked PAT PENDG, which means a U.S. patent might have been issued. No city or manufacturer's name is stamped, and the postal rates cover a broad range of dates from the 1880s to the 1930s. It even came in its own box with a postal scale poem, written by an unknown muse, HWP [Figure 2]:

*Here's the finest Postal-Scale, for package or for letter;
Accurate, precise and neat, nothing could be better;
Of a size that you can take wherever you may go,
Then, just when you need it, the postage rate you'll know.*
60-18 H W P

A search of trademarks at the U. S. Patent Office shows neither live nor dead marks for the term Anchor Scale. In contrast, a search of Google patents using the term postal scale gives hundreds of possibilities. Search result number 206 yielded the Anchor Scale patent, issued to William A. Hyde in 1921 as patent number 1,367,972 [Figure 3]. What seems to be a common pendulum scale design was, in fact, granted a patent. The drawings, the four pages of text, and the thirteen claims reveal that this is no ordinary design.

The innovation is the use of a case hardened steel rod that

Figure 2. ♣ ♣ Anchor postal scale box. 4 1/8" square x 3/4" deep.
Courtesy of Jan Berning.



Figure 1. ♣ ♣ Anchor postal scale overview.

is ground to a triangular-shaped pivot with a concave knife-edge to minimize friction in comparison to a round rod [Figure 4]. The design also incorporates a case hardened saddle-shaped support for the pivot. This results in an eccentric movement of the pointer axis from the vertical zero weight position to the loaded weight position. [See Figures 5 and 6]. These unique features are hidden beneath a bushing, and only revealed in the patent drawings. Perhaps the patent examiner felt this was prior art, or had

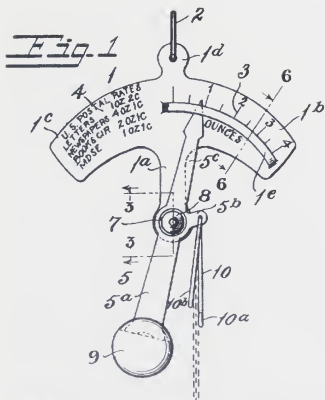


Figure 3. Anchor postal scale overview-patent No 1,367,972, issued Feb. 8, 1921 to William A. Hyde.

William Hyde the physicist first appears as a five year old in the 1880 census for North Haven, Connecticut (near New Haven, home of Yale University), having been born in Minnesota. His father, a bookbinder, was a Civil War prisoner at Andersonville¹. William Hyde is still listed in his bookbinder father's household in North Haven in the 1900 census, age 25, single, and "at College." Interestingly, the family lived next door to a postmaster, perhaps of formative significance if this budding scientist turns out to be the Anchor postal scale inventor.

The 1910 Washington, D. C. census lists William Hyde as a lodger, single, and an Electrician with the Navy Dept. He lived in the household of a family with a single daughter around his age. She was a clerk at the Patent Office, and one wonders if she influenced him. I thought perhaps a romance might even have developed. However, by 1919,⁶ William Hyde again lived with his parents in North Haven, and the 1920 census shows that he is still single at age 45, and an Electrical Engineer.

I also found the following reference to him in a 1920 air service magazine, which suggests he may have spent some time in the military in connection with his earlier ordnance job in Washington:

WILLIAM ALBERT HYDE, former Captain Air Service, has joined the Association from North Haven, Conn., where he is practicing as an Electrical Engineer and Physicist. Captain Hyde was formerly Laboratory Assistant, M. I. T. Electrical Assistant U. S. Signal Corps, and Electrical Expert of the Navy Department. While at Langley Field he was O. I. C. [Officer in Charge] Research Laboratory.

difficulty understanding the invention, as the patent was applied for on November 14, 1916, and not granted until February 8, 1921. Perhaps WWI also slowed things down at the examiner's office.

The patent gives two valuable clues along with the date: the inventor's name, William A. Hyde, and his residence, Cambridge, Massachusetts. The next step was to simply search for Hyde in the ancestry.com database. However, it soon became apparent that the name William Hyde is relatively common, and I was unable to locate a candidate living in Cambridge, Massachusetts for any of the decennial census years.

After several false starts, I found a William Albert Hyde with a spark of promise. After a science background in high school,¹ he received a physics degree from Yale in 1902.² He then studied Electrical Engineering at the Massachusetts Institute of Technology in Boston in 1903 and 1904, while working at the Bureau of Ordnance in Washington, D. C.³ He next attended Harvard's Lawrence Scientific School in Cambridge between 1911 and 1913 while still based at the Bureau of Ordnance.⁴

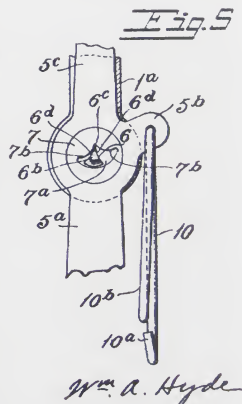


Figure 4. Patent No.1,367,972 detail-pivot and support.



Figure 5. Anchor postal scale-pointer position with no weight.



Figure 6. Anchor postal scale-pointer position with 4 oz weight.

While this is all quite interesting, I still had found no evidence of a connection between this William Hyde and the Anchor scale. Without another reasonable alternative, I doggedly pursued this overqualified candidate, and looked at hundreds of Google pages for a link, using every search trick I know.

Somewhere on this long Internet journey, I found that the physicist William Albert Hyde received a prestigious medal from the Franklin Institute in 1937: *In consideration of his discovery and development of a process for the centrifugal impregnation of objects which has materially reduced the time necessary for impregnation as compared with the prior art.*⁸ At the time, he was Director of Research for a high-tech company in Worcester, Mass., the Leon J. Barrett Company. Hyde was associated with Barrett as Director of Research until at least 1950, when he was 75 years old.⁹

I seemed to be moving even further away from the inventor of the humble postal scale, but kept at it.

At last, using just the right key words within quotes, Google Books gave a snippet of information that linked William Albert Hyde who worked at Barrett with the Anchor Scale Company:

...Ordnance Dept, USN, 05-13; pres, Anchor Scale Co, Mass, 14-17; director research, Leon J. Barrett Co, Worcester; 28- Sig. C, 17-18, lieutenant; capt, ASR, 20- AA Ballistics...

The reference cited was *American Men of Science for 1938*. Many American scientists of note and their resumes are listed in this publication, which is updated every five years. I located a copy, which gives the full citation:

*William Albert Hyde, Worcester, Mass. Field engineering, horn Willmar, Minn., Aug 10, 1874. PH. B. Yale, 01, 02-03, MIT 03-04, George Washington, 06-07, Harvard, 11-12, electrical assistant Sig. C. 05, electrical expert Ordnance Dept, USN, 05-13; pres, Anchor Scale Co, Mass, 14-17; director research, Leon J. Barrett Co, Worcester; 28- Sig. C, 17-18, lieutenant; capt, ASR, 20- AA Ballistics; stabilization; centrifugal engineering; photography of air waves about bullets in flight; flight of projectiles; photography at high velocities; stabilization of airplane instruments; applying centrifugal force to industry.*¹⁰

My translation of the more cryptic parts follows: received a Bachelors of Philosophy degree from Yale in 1903 (New Haven), attended MIT from 1903 to 1904 (Boston), attended George Washington University from 1906 to 1907 (Washington DC), attended Harvard University from 1911-1912 (Cambridge), was an electrical assistant with the Signal Corps (part of the U. S. Army at the time) in 1905 (most likely Washington DC), was an electrical expert with the Ordnance Department of the U. S. Navy from 1905-1913 (Washington DC), was



Figure 7. // The author's scale reads *NOT LEGAL FOR USE IN TRADE* on the lower end of the pointer.

president of the Anchor Scale Company from 1914 until 1917 (Cambridge), Director of Research at Barrett from 1928 until present (1938-Worcester), was with the Signal Corps from 1917 until 1918 as a lieutenant (location unknown), and is a captain in the Air

Figure 9. // This version of the Anchor Scale has the company name and address stamped on it. It reads *ANCHOR SCALE CO. CAMBRIDGE, MASS.*

Courtesy Phil Wehman.



Four versions of the Anchor Scale have been found in member's collections [Figures 7-10]. All have U.S. postal rates for letters, Newspapers, Books, Cir. and Mdse that were in effect from July 1, 1919 until July 6, 1932 stamped on them. All four have capacities of 4 ounces by 1/2 ounce and all read *ANCHOR SCALE* below the ring and *PAT PENDG* under the pointer.

Two scales read *NOT LEGAL FOR USE IN TRADE* at the lower end of the pointer and two read *ANCHOR SCALE CO. CAMBRIDGE, MASS.* under the pointer. Also evident are two different poise designs.



Figure 8. // This Anchor Scale has no notation about trade use. The concentric circles on the poise are also on the scale in figure 9.

Courtesy Jan Berning.

Figure 10. // This Anchor scale combines the text on the scales pictured in figures 7 and 9. It reads *NOT LEGAL FOR USE IN TRADE* and *ANCHOR SCALE CO. CAMBRIDGE, MASS.*

Courtesy Cliff Lushbough.



Service Reserves from 1920 until present (1938)¹¹.

This short bio, provided by Hyde, suggests that the Anchor Scale Company lasted only from 1914 until 1917, at least with Hyde as president. Since Hyde filed the patent application in 1916, and the patent did not issue until 1921, the Anchor Scale Company does not appear to have been successful. Or, perhaps Hyde sold the company by 1918. If the company survived after the patent issued, there should be examples of the scale marked with the patent number.

Since it was important to understand when William Hyde lived in Cambridge beyond his 1911-1913 student years at Harvard, I asked a friend at the Boston Public Library if he would check their collection of Cambridge City Directories. I was disappointed to find that these are in offsite storage awaiting fumigation, and are not accessible. Fortunately, I was able to get help from the Cambridge Historical Society, and learned that there is only one Cambridge directory listing, 1917, for William A. Hyde (Anchor Scale Co). His home was at 344 Harvard, and the Anchor Scale Company was located at 46 State Street. There are no listings from 1913-1915, nor from 1918-1928. They do not have a copy of the 1916 directory, which would have been compiled in late 1915.¹²

The 1917 Cambridge city directory listing is consistent with the November 14, 1916 patent filing when Hyde lived in Cambridge. This single listing strongly suggests that the Anchor Scale Company existed for around two years during 1916 and 1917, and was no longer viable by late 1917 when the 1918 directory would have been published.¹³ The complex hardened knife-edge design may have been just too expensive to manufacture compared to designs using a simple rod.

Who manufactured the Anchor scale for Hyde? Now that I had the 46 State Street Cambridge address of the Anchor Scale Company, additional Google searches revealed that Richard Megson & Co, Bakers' Appliances, was the only business listed at this address from 1913 until at least 1923.¹⁴

Further census searches showed that Richard Megson was born in Sheffield, Yorkshire, and was the son of a baker and confectioner. In 1871, at age 17, Richard was a bread baker in Holbeck, Yorkshire, his father having died a few years earlier. He immigrated to Boston in 1881, and was listed as a baker in Cambridge, Mass. in 1889, and in nearby Lawrence, Mass. in 1890 and 1891.

In 1890 Richard Megson patented a Cake, of all things, and in 1892 a Baker's and Confectioners Depositing Apparatus.

The Cambridge censuses show Richard Megson was well equipped to manufacture the Anchor postal scale for Hyde. In 1900, he was listed as an Inventor's Manufacturer, in 1910 a Manufacture of Machines for Bakers, in 1920 a Manufacturer of Machines, and in 1930 a Baker Supply Manufacturer.

This forms a reasonably complete picture of William Albert Hyde and his short-lived Anchor postal scale. I then decided to try one more search using his last name first, followed by variants of his middle name in combination with his first name. I was delighted to find Hyde in a publication on Harvard graduates who had served in WWI. This finally put things in proper context, and filled in an important blank:

Hyde, William Albert, s '11-13. Enlisted private 1st class Aviation Section, Signal Corps November 13, 1917; detailed to Ground Officers' Training School, Kelly Field, Texas; commissioned 2d lieutenant Aviation Section, Signal Corps February 26, 1918; stationed at Hazelhurst Field, N.Y.; assigned to Science and Research Department, Washington, D.C., May 15; detailed to Science and Research Laboratory, Langley Field, Va., May 21; promoted 1st lieutenant Air Service, Aircraft Production October 27; discharged July 29, 1919. Commissioned Captain Air Service Officers' Reserve Corps March 22, 1920.¹⁵

Thus, after the United States declared war on Germany in April 1917, Hyde enlisted and served from late 1917 until shortly after the Treaty of Versailles of June 28, 1919. Clearly, it was not practical to continue his

involvement with the Anchor scale while in the military, and the venture died. By the time the patent issued in 1921, Hyde had decided on a career as an Electrical Engineer. So, what appears to be a simple pendulum scale is really quite special, and has quite a story. While not a commercial success, it shows the creativity of a man who was later recognized for major contributions.

Notes & References:

1. *Annual Report of the Board of Education of the New Haven City School District for the Year Ending August 31st, 1889*. New Haven: 1889, p. 43. Class of 1893, Scientific, 3 years, William Albert Hyde.
2. *Catalogue of Officers and Graduates of Yale University in New Haven, Connecticut, 1701-1915*. New Haven: 1916, p. 371. See also *Catalogue of Yale University 1901-1902*. New Haven: 1901, p. 539. Honors THE SHEFFIELD SCIENTIFIC SCHOOL Class Of 1901. Two-year Honors, For Excellence In All Studies. *Electrical Engineering Course*: William Albert Hyde
3. *Bulletin of the Massachusetts Institute of Technology, Boston*. Vol. 50, No. 3. *Register of Former Students* May 1915, p. 263. Hyde, William A(lbert). '04, VI [Electrical Engineering], 1903-04, Bureau of Ordnance, Navy Department Washington DC. [MIT was founded in Boston, and moved to Cambridge in 1916].
4. *Harvard University Catalogue*, Cambridge, 1912, page 145.
Hyde, William Albert, Washington, DC, 5 Cutler Ave. Ph.B. (Yale Univ.) 1901, Graduate Student, Sheffield Scientific School, 1904-03, Massachusetts Institute of Technology. 1903-04, George Washington Univ., 1906-07. Electrical Assistant, US Signal Corps, Washington, 1905-06. Electrical Expert, Bureau of Ordnance, Navy Dept., Washington, DC, 1906-12. II yr.
See also *Sigma XI Quarterly*, Volume 1, no. 1, March 1913, p. 59.
List of members, District of Columbia.
William Albert Hyde, elected to Sigma XI in 1901 at Yale; Electrical Expert, Bureau of Ordnance, Navy Department.
5. All census data is from ancestry.com.
See also *A Short Account of My Prison Life During the Civil War 1861-1865*: North Haven, Conn., by Albert A. Hyde. Typescript, 7 leaves, Nov 25, 1909. Only copy at Univ. of CA-Berkeley.
6. See also *Harvard Alumni Directory* 1919, p. 364.
Hyde, William Albert. (Lawrence Scientific School 11-13. Research) New Haven, Conn.
7. *U.S. Air Service*, Volume 2, No. 7, February 1920, p. 34.
8. *Science*, Vol. 89, New Series, May 5, 1939, p. 406.
Awards of the Franklin Institute Medals for 1938. The John Price Wetherill Medal, founded in 1925 by the family of John Price Wetherill, to be awarded for discovery or invention in the physical sciences, or for new and important combinations of principles or methods already known.
Hyde was granted patent number 1,981,453 on Nov 20, 1934, which was assigned to Barrett. It was applied for on May 29, 1931, and reissued on July 13, 1937, No. 20,444.
See also *Journal of the Franklin Institute*, Vol. 228, August 1939, p. 223.
9. *Industrial Research Laboratories of the United States*. National Research Council, 1938, p. 31; 1946, p. 35; 1950, p. 39.
10. *American Men of Science*, 1938, p. 708. Sincere thanks to Herb Pratt, New Castle, DE, for providing this information from his copy.
11. Lineage of the United States Air Force from wikipedia.
Aeronautical Division, U.S. Signal Corps August 1, 1907–July 18, 1914
Aviation Section, U.S. Signal Corps July 18, 1914–May 20, 1918
Division of Military Aeronautics May 20, 1918–May 24, 1918
U.S. Army Air Service May 24, 1918–July 2, 1926
U.S. Army Air Corps July 2, 1926–June 20, 1941
U.S. Army Air Forces June 20, 1941–September 18, 1947
United States Air Force September 18, 1947–present
12. Sincere thanks to Gavin W. Kleespies, Executive Director of the Cambridge Historical Society, Cambridge, Mass., for providing this information during a time of renovation.
13. *Directory of the Living Graduates of Yale University, Issue of 1914*, p. 200. William A. Hyde, 1250 Columbia Road, Washington, D. C. See also *Directory of the Living Graduates of Yale University, Issue of 1916*, p. 193. William A. Hyde, Anchor Scale Co., Cambridge, Mass.
14. *1913 Boston directory*. Bakers' Appliances. Richard Megson & Co. 46 State; 1923 Boston directory, Bakers' Appliances. Richard Megson & Co. 46 State.
15. *Harvard's Military Record in the World War*. Cambridge, 1921, p. 499.

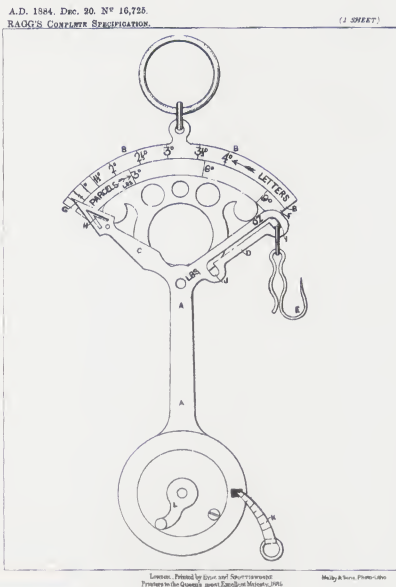
Cross Peerless Letter/Parcel Scales

BY L. MICHAEL FULTZ

Recent additions to my collection illustrate that the Cross Pen Company of Boston made and/or sold items in addition to fountain pens (as did the A. T. Cross Company of Providence). Not only are these scales themselves interesting but they give additional insight into the Boston company and its somewhat limited relationship with the more widely known A. T. Cross. This question arises because, while almost everyone has heard of Cross ball point pens and pencils (the Providence company), few understand that there were really two Cross Pen Companies.

It is probable that the "Peerless" Letter Scales were manufactured by a contractor for The Cross Pen Company of Boston. Neither the scales themselves nor the catalog illustrations indicates that the scales were Patented. However, British Patents for apparently identical scales were granted in 1871 and 1884 to Alban Edward Ragg (No. 2052 and No. 16,725). Ragg was a clergyman and it is not known if he invented other items.

Figure 1. ➤ British patent number 16725 was issued to Alban Edward Ragg on December 20, 1884 for a pendulum postal scale with a tape measure in the poise. It is believed that this patent was used in the manufacture of the Cross pen scales.



The scale design is ingenious. The "Peerless" Letter Scales use a poised, pendulum style hanging balance mounted on a quadrant scale, with a pointer to read weight in ounces directly from a scale impressed into the arc. On the hanging scale the graduations are $\frac{1}{4}$, $\frac{1}{2}$, $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3, $3\frac{1}{2}$, 4, 6, 8, 10, 12. It features a combination clip and hook to weigh both letters and small parcels. The scale on a weighted iron or pottery base has different graduations in ounces, omitting the $\frac{1}{4}$, $\frac{1}{2}$, and the other half ounce markers but adding 7, 9, and 11 ounce markers. While I had thought the two would use mostly

Figure 2 & 3. ➤ The two hanging versions of the Cross Pen, "Peerless" Letter Scale measure $6\frac{1}{8}$ " long by $3\frac{1}{4}$ " wide.

Fig. 3 Courtesy André Sol.



Figure 4. // The Cross Pen scale shown here has a cast iron base. The quadrant dial and pendulum are identical in size and shape to the scale shown in figure 2. However, the dial does not include $\frac{1}{4}$ or $\frac{1}{2}$ oz markings, having only a dot (•) stamped for the $\frac{1}{2}$ markings from $\frac{1}{2}$ to 7½ ounce graduations. The scale, letter plate and standard are constructed of nickel-plated brass. It measures 7" tall and the quadrant measures 3½" from tip to tip. It is marked on the pendulum arm as are the two hanging versions shown above. See Figure 6.



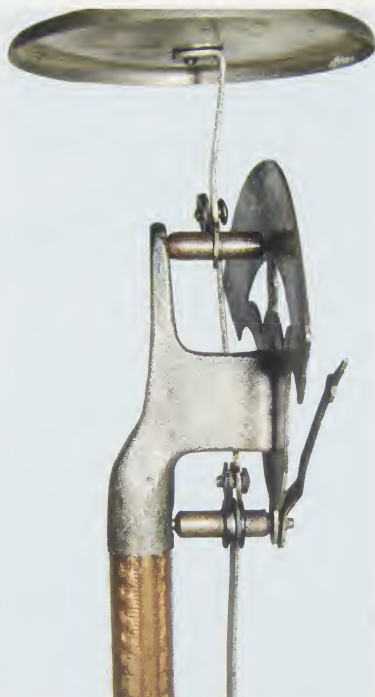
Figure 5. // This unmarked scale has identical features to the scale shown at left. It has a rose-colored ceramic and brass base and an ornate brass standard. The arcs on the scales with bases are the same size and style as the scale in figure 2. The mechanism on this scale is identical to the scale shown in figure 4. See figures 7 and 8.

Courtesy Phil Wehman.

Figure 6. // The scales pictured in figures 2, 3 and 4 are inscribed "THE CROSS PEN CO. - BOSTON" on their pendulum arms as shown in the illustration to the right. The pendulum arm on each scale measures 2½" from the center pivot point to the top of the poise.

Courtesy André Sol.





Figures 7 & 8. $\swarrow \searrow$ The mechanism on the two scales pictured in figures 4 and 5 are identical proving without a doubt that both were made by the same manufacturer. Since Cross advertised that they sold scales with both a *Japanned metal base* and a *low tile base* the unmarked scale on the right can definitely be attributed to Cross. With the Japanned metal base, the scale sold for one dollar, and with the low tile base, \$1.25. The standard on the tile base Cross, shown at right, is ornately embossed brass while the standard on the iron based version is of nickel-plated brass.

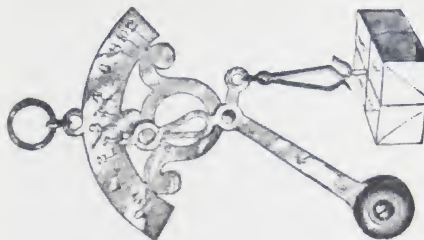


Figure 9. $\swarrow \searrow$ The quadrant dial on the hanging Cross Peerless letter scales are graduated by $1/4$ ounce to $1/2$ ounce, by $1/2$ ounce to 4 ounces and by 2 ounces to a full capacity of 12 ounces. The dial does not indicate that it weighs by the ounce leaving that for the user to ascertain.



Figure 10. $\swarrow \searrow$ The quadrant dial on the Cross pen scales with bases are graduated by $1/2$ ounce to 8 ounces, with the $1/2$ ounce markings shown by a dot (•), and by the ounce to 12 ounces. The quadrant reads oz between the 0 and 1 graduations.

THE "PEERLESS" LETTER SCALE.



This scale is made of hard metal, elegantly nickel plated, and will accurately weigh up to 12 oz.

It has no springs, weights, or levers to get out of order, and is the best scale for weighing light articles in the market.

The scale is provided, as shown in cut, with a grip and hook to easily and firmly attach letters or parcels. Every family should have one.

Price 50 cents. Sent to any address on receipt of price. Special terms to Postmasters on application. Address

THE CROSS PEN CO.,

306 Washington St., Boston, Mass.

Next door to old South Church.

Figure 11. // This advertisement from the May 1887 issue of *Lead a Hand*, a monthly magazine of organized philanthropy featured the Peerless Letter Scale which could be ordered from the Cross Pen Co. for 50¢.

the same components, close examination suggests that almost none of the parts could be interchanged. Only the weight on the pendulum and the screw which holds it in place appear to be identical.

Contemporary advertisement and catalog listings for the scale noted that *the scale is made of hard metal, nickel-plated, weighs accurately up to twelve ounces, and will wear for years. It has no springs, levers, or other contrivances that are liable to get out of order, and is simple, accurate, and durable. Each Scale is packed in a neat box, and can be sent safely through the mail.*

The case or box that originally accompanied the scale is described as a *handsome morocco box [sic], satin-lined, and is especially suitable as a presentation case.* The list price of the Peerless Letter Scale was 50¢ and the price of the case 25¢. The catalog listing also indicated that the scale could be purchased with two different bases – with the Japanned metal base, the scale sold for one dollar, and with the low tile base, \$1.25.

One of the Ragg Patent drawings shows an improved version with two fulera to increase the range of the scale. This version also was shown with a pan and was even stamped for use in weighing British Sovereign and half Sovereign gold coins. However, no example of this design has yet been found.

The Cross Peerless Letter Scale seems to be uncommon, with examples known in most scale collections and the examples of higher original cost are rare with fewer than a half dozen examples known. It is better known among scale collectors than among pen collectors.

Other Cross Pen Company - Boston products:

Pencils and pencil cases

Stylographic fountain pens

Nib fountain pens

Pen/pencil pocket protectors

Fountain pen and Stylographic pen ink

Stamp cases



**CROSS FOUNTAIN PEN,
CROSS STYLOGRAPHIC PEN,
CROSS PENCIL SPECIALTIES,
PEERLESS LETTER SCALES,
CROSS FOUNTAIN PEN INK,
CROSS STYLOGRAPHIC INK.**

Greenough, Adams & Oshling, successors to

THE CROSS PEN CO.

108 Devonshire Street, BOSTON.

Figure 12. // This advertisement from *The Harvard Graduates Magazine* of September 1897 features the Cross logo of a lion with a cross in its mouth. Among the items listed on this ad were the Peerless Letter Scales.

The Boston company used the "Peerless" brand name on several products including pens. Walter F. Cushing was certainly the financier behind the Cross Pen Company of Boston. He and his partners financed the Patent litigation in which the A. T. Cross's invention of a stylographic pen was held to have preceded the invention of a similar pen by Duncan MacKinnon of Canada. As a result of that litigation, the MacKinnon Pen Company of New York was put out of business.

Notes:

1. Known ads for the scale -- 1887, 1889, 1897, 1916, various college and literary magazines, Good Housekeeping
2. There are Cross postal scales in private collections (including those of the author and of the Sachs - Fultz Pen Collection in Chicago) and also in the Smithsonian's National Postal Museum.
3. Special thanks to Laurie Owen, owner of Penbid.com, Inc. for her generous permission for me to use the information and article I wrote for Penbid about the Cross scale and the Cross Companies. Thanks to Jan H. Beming for her encouragement and information, to Diana Crawford-Hitchins for copies of the Ragg's British Patents, to Barbara Lambert, the author of *150 Years of the A.T. Cross Company*. Lincoln, RI: Cross Company, 1996, and to Rob Astyk for information about Walter F. Cushing and his empire.
4. www.earlyofficeuseum.com

Author's Biography

L. Michael Fultz is a collector of pocket and desk top items including pens, pencils, watches, knives, scientific instruments, inkwells, etc. He is the vintage pen editor of *Pen World International* magazine and the vintage watch editor of *InSync* magazine. He lives in southern Wisconsin.

The Peerless Fountain Pen is a Perfect Fountain Pen.



A strong statement, and a true one. No skipping or dropping of ink.
Always ready. Continuous flow of ink. 16-K gold pen.

Every Pen Fully Guaranteed.

Illustrated catalogue and price-list free.

THE CROSS PEN COMPANY.

Figure 14. This 1889 advertisement for the Cross Peerless fountain pen was found in *About Advertising and Printing* by Nathaniel Fowler, Jr. Below the text were prices for ordering printing dies for dealers to use in any advertising media of choice.



Figure 13. The pendulums of both the hanging version, bottom, and the stand version, top, of the Cross Pen scales are identical in arm length, diameter and design. The two shown here vary only in the direction of the text on their arms.



Figure 15. This hanging scale is identical to the Cross scales but is marked Marshall, Son & Co. Boston. The company was described in the US Centennial Commission's 1876 catalog as Bookbinders, printers, & paper-box manufacturers.⁴

Scales With the Initials N B

BY REIN KOK

In the Dutch language we know different meanings of the abbreviation N.B.

1. NB = Nota Bene = please note
2. NB = Noorder Breedte = north latitude
3. NB = Noord Brabant = province of Holland

Scale collectors have often seen this abbreviation on French letter-scales. We know these initials belong to Narcissé Briais, a French instrument maker who lived in the second half of the 19th century. Besides making postal and letter-scales he also produced mathematical and physical instruments. He had his workshops at different places in Paris:

- 1859 – 1860 at rue Pierre Levée 17 where he made physical and mathematical instruments
- 1861 – 1881 at rue Faubourg du Temple 60
- 1882 – 1886 at rue Charlot 62

BREWER FRÈRES, 76, BOULEVARD SAINT-GERMAIN, PARIS

869

PESE-LETTRES — BALANCES POUR PHOTOGRAPHIE

(Non contrôlés par l'Etat).

8853. Pèse-lettres à main pour la poche, à cadran divisé avec aiguille, contrepoids, pince en métal et anneau de suspension, entièrement nickelé.

Pesant:	30	50	100	300	500 grammes.
Sans écrin	1.35	1.50	2 »	2.50	3 »
Avec écrin	2.50	2.75	3.50	3.75	4.50

Ces petites balances de poche ne sont pas contrôlées et ne peuvent pas servir à la vente, elles servent à estimer rapidement la valeur d'un bijou, le poids d'une lettre, etc.



N° 8853



N° 8854



N° 8855

8854. Pèse-lettres à cadran quart de cercle sur pied bois, avec plateau métal nickelé, vis de niveau, pièces métalliques ajourées et entièrement nickelées.

Pesant	60	100	300	350 grammes.
	5.75	6.50	9.50	10.50

Ces pèse-lettres peuvent aussi servir à peser des produits chimiques ou autres objets mais ne peuvent servir à la vente au public.

8855. Pèse-lettres à cadran rond sur pied bois, avec pièces métalliques ajourées et entièrement nickelées, plateau métal, vis de niveau etc., fabrication soignée.

Pesant	60	100	300	350 grammes.
	10 »	12 »	15 »	18 »

Figure 1



Figure 2a. //



Figure 2b. //



Figure 3a. //



Figure 3b. //



Figure 4a. <<



Figure 4b. >>

Figure 5a. <<



Figure 5b. <<



Figure 6. <<



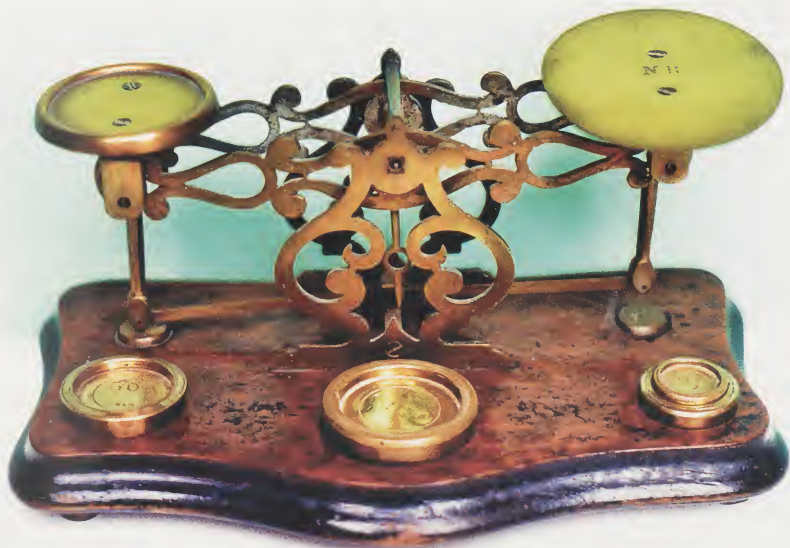


Figure 7. ▲ ▲

At the last two addresses he mainly made letter-scales and balances. In 1887 the workshop was taken over by G.Restorf and moved to rue Oberkampf 74. Here Restorf still used the initials of NB. The workshop existed at this address until 1891 and then moved to Avenue de la Republique. In 1914 the business was liquidated. Fig.1 shows a part of an old catalog page (year unknown) of the Brewer Freres [Brewer Brothers] in Paris, on which a few scales of NB are pictured.

Fig.2a is the same as no. 8853 in fig.1. The dial is graduated to 300 grs. Fig.2b has a small hanging pan and is graduated to 100 grs. The pan was possibly used for weighing chemicals, precious stones, gold and silver jewels. It is about 16 cm tall. This type of scales has dials graduated to 30-50-100-300 and 500 grs. Fig.3a could also be used for different purposes. This pan has a tab to take it off easily. Under the initials are the letters SGDG. This means "Sans Garantie Du Gouvernement"= Without Government Guarantee. This abbreviation was used for scales with dials under 350 grs. Scales over 350 grs had to be calibrated in accordance with the Circular of 26th of June 1906 of the "Service des Poids et Mesure". Restorf patented this scale on the 13th of January 1885. In an article in the French magazine "La Nature"(1887) Restorf was described as the maker but this design was already patented in 1871 by Ragg in Great Britain. Different variations of it are made with different names. Fig.3b shows the same scale but with the name "Ch Nias- Bruxelles". This scale is identical to no. 8854 in fig.1.

Another NB-scale is fig.4a. The pointer of this scale is fixed and the dial movable. In the center of the dial hangs a counterpoise. The end of the dial moves between the forked-end of the load-arm. Near the turning-point of the scale are the initials NB and the word *déposé* (= registered). The pan of this scale has been replaced. Fig 4b is the same scale with a wire letter-rack.



Figure 8a. <<

A nice letter-scale is fig.5a with a circular brass dial. It is graduated to 100 grs. The base is of wood and it's identical to no. 8855 in fig.1. This type of scale exists with capacities of 60-100-300 and 350 grs. Normally the load-arm hinges at two points with the pillar and forms a parallelogram. The bottom hinge is connected to the pointer. In fig.5b the bottom hinge is not connected to the pointer, but you see a projection with a knob. This projection is connected to the pointer and moves between the forked-end of the load-arm. It rests on a cross-beam. When the pan is loaded the arm goes down and the knob descends under its own weight and the pointer moves. Fig.6 shows the same scale (without initials) but with a very nice carved base. In this one the load-arm is connected with the pointer.

Narcissé Briais also produced the well-known roberval balances on a wooden base with several weights in front of it.(fig.7) He made these scales in different sizes. Scales made for France were provided with gram weights, while those exported to England had ounce weights.

A very special NB-scale is one with an enamel dial and postal-rates of about 1880. (fig.8a) At

the bottom of the dial are the initials of NB (fig.8b). This is the only one of NB I know with an enamel dial. I suppose NB is not the maker of this scale, but Albracht and Horn are the makers. Three other identical scales of this model are known: a German one, a Dutch one and an English one. They all bear the name of Albracht and Horn (EQM 3139 fig.3). In France this scale is unknown. In "le Systeme Métrique" (the quarterly magazine of the French scale-collectors) last year, there was a call to collectors to inquire if there was someone who knew something about this scale. The German scale is in the collection of the Postmuseum in Frankfurt (Germany), the English one is in the collection of Dirk Schmitz and the French and Dutch ones are in my collection. Unfortunately for the makers shortly after these scales were produced postal-rates changed and so these scales became unsaleable.

Notes:

1. This article first appeared in the September 2000 issue of Meten & Wegen the journal of the Dutch scale collectors society. Their website is www.gmiv.org. It was translated and updated by the author.
2. Note the similarities between figure 2a & 2b and the hanging Cross pen and Marshall scales shown on page 3445-3449 of this issue.

Figure 8b. >>



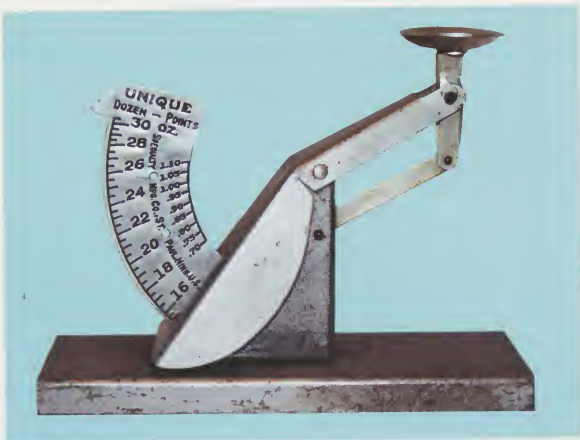
Pendulum Egg Scales

BY CHARLEY AMSBAUGH

The Cousins: Unique, Graham, Jamesway and National

Most of the American pendulum egg scales were made in the 1930s. Perhaps the earliest was the Unique Egg Scale, followed by its Canadian cousins, the Graham, Jamesway, and National.

The **Unique Egg Scale** was produced in the early 1930s by the Specialty Mfg. Co. of St Paul, Minnesota, the same company that produced the Acme egg scale. It was selling for 98¢ in 1935, and for \$1.70 in 1950.



The **Graham Egg Grading Scale** was made, or at least distributed, by Graham Metal Products, Ltd., of Preston, Ontario. Advertising has been found from 1950.



The **Jamesway Egg Grading Scale** was made, or at least distributed, by the Eastern Steel Products, Ltd., of Preston, Ontario. Eastern Steel Products Ltd. was a subsidiary of the Los Angeles, California based James Mfg. Co., which made the Reliable Egg Scale.



The **National Egg Grading Scale** was made, or at least distributed, by the Rideau Specialty Co. in Smith Falls, Ontario.



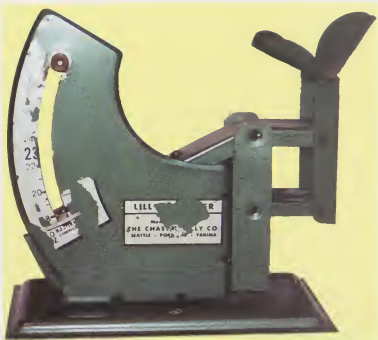
Brower Deluxe Egg Scale (with or without candler). The Brower Deluxe Egg Scale could be purchased mounted on an egg candler, or as a stand alone model. Mounted on an egg candler, it was offered in Brower and other poultry equipment catalogs as the "Double Duty" Egg Scale and Candler from 1936 (\$2.50) to 1943 (\$2.65).



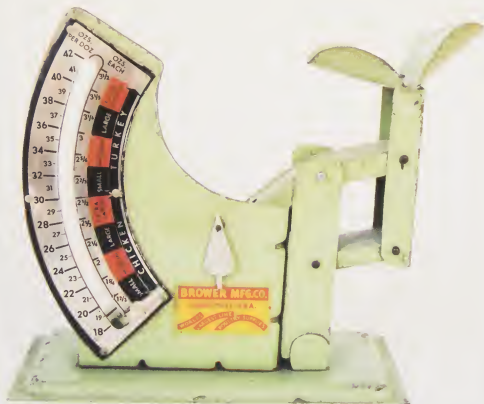
Brower's stand alone **Deluxe Egg Scale** was offered by Brower and other poultry equipment distributors from 1936 (\$1.35) through at least 1950 (\$1.45). The Deluxe Egg Scale may be found in various colors and with the decals of various distributors: Makomb (top), Montgomery Ward (center), and Cyclone (bottom), shown here.



Otto Chicken Egg Grader was manufactured by the Henry J. Otto Mfg. Co. of Evansville, Indiana, beginning in 1936 and marketed by various distributors: as the Lilly Egg Grader (top) by the Charles H. Lilly Company of Seattle, Portland and Yakima; as the C-A Egg Scale (center) by Coast Agencies Limited, 1353 Willow St, Los Angeles 13 Calif., and as Brower's Deluxe Egg Scale (bottom) by the Brower Mfg. Co. in 1946.



The physical characteristics of the **Brower Chicken-Turkey Egg Grader** lead one to believe it was made by the Henry J. Otto Mfg. Co. of Evansville, Indiana, for distribution by the Brower Mfg. Co. of Quincy, Illinois. Brower catalogs were selling it for \$1.75 in 1948 and for \$1.95 in 1951.



Showcase



A Satisfactory Egg Scale

Before the war we imported an egg scale which answered the purpose, altho not very good. An egg scale can not have a spring because of the small article to be weighed.

The illustration shows the new one which sells at one dollar and fifty cents, postage paid.

This egg scale was advertised by the Cornell University Co-operative Society of Ithaca, New York in a January 1922 issue of *The Cornell Countryman*. Cheaply made from thin brass, it measures 6 $\frac{3}{4}$ " tall, has a square base measuring 2 $\frac{1}{8}$ ", an egg cup measuring 1 $\frac{15}{16}$ " in diameter and has a 4 ounce capacity by $\frac{1}{8}$ ounce on the quadrant dial.

Avery Druggist's Scale

BY ALBERT RANGELEY

On reading a recent copy of EQM I saw, on Page 3404, a scale in 'Showcase' which bore a great similarity in principle to two scales (Fig. 1) in my collection.

My scales are illustrated in the 1862 catalogue of W & T Avery of Birmingham, England Page 38.

They measure 10"x 5" x 6 1/2" high to the top of the case, the overall height to the top of the 8 1/2" diameter brass pan being 9". The brass weight-plate is rectangular with rounded corners. The knobbed drawer is designed to carry weights up to 2 lb, the capacity of the scale being 2 lb. The case is in polished mahogany and is, in the words of the catalogue 'handsome'.

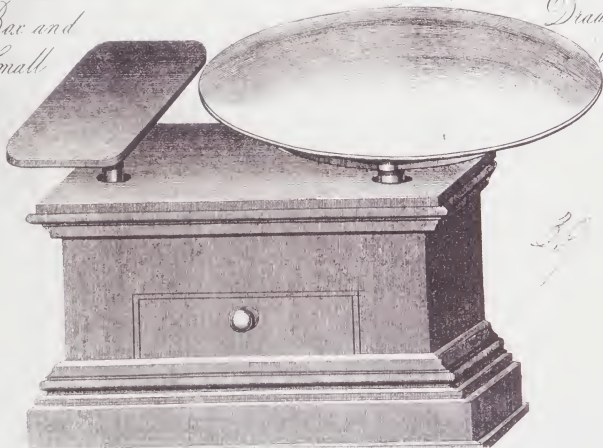


Fig. 1. A.A.

The description in the catalogue (Fig. 2) is in cursive script and reads as follows: *New invented machine for Druggists to weigh from 1 oz to 2 lb. Brass Furniture Handsome Solid Mahogany French Polished Box and Drawer for Small Weights.* The scale catalogue number is 637.

The date of 1862 does of course precede that of the U.S.A. version of 1878 by 16 years.

*New Invented Machine for Druggists to weigh from 1 oz to 2 lb.
Brass Furniture Handsome Solid Mahogany French Polished
Box and Drawer for Small Weights*





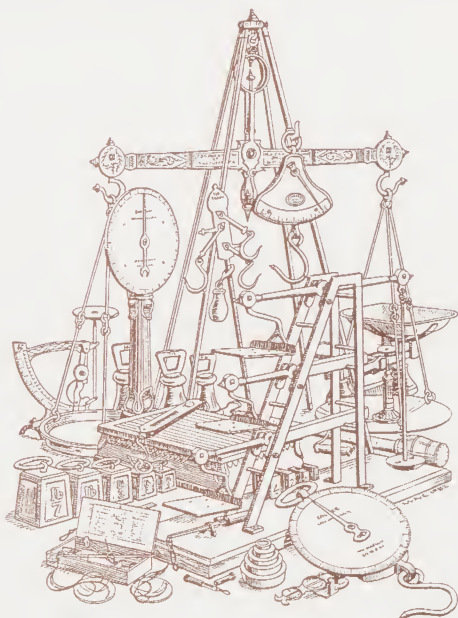
EDITION ANTIQUE

QUARTERLY MAGAZINE OF THE INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

MAY 14 - 18, 2009

CONVENTION ISSUE

KANSAS CITY, MO





ISASC CONVENTION SITES

1979	San Francisco, CA
1980	London, England
1980	New York City, NY
1981	Delft, The Netherlands
1983	Sindelfingen, West Germany
1984	Chicago, IL
1986	Washington, DC
1986	Paris, France
1987	Anaheim, CA
1988	Boston, MA
1989	San Francisco, CA
1990	Philadelphia, PA
1991	Chicago, IL
1992	San Diego, CA
1993	Baltimore, MD
1994	San Francisco, CA
1995	Hershey, PA
1996	New Orleans, LA
1997	Los Angeles, CA
1998	Toronto, Canada
1999	Atlanta, GA
2000	Seattle, WA
2001	Chicago, IL
2002	Pittsburgh, PA
2003	San Antonio, TX
2004	Minneapolis, MN
2005	Washington, DC
2006	San Francisco, CA
2007	Dearborn, MI
2008	Chattanooga, TN

Welcome
to the
Thirty-First Convention
of the
International Society
of
Antique Scale Collectors



May 14-18, 2009
Embassy Suites Airport
Kansas City, Missouri

P R O

THURSDAY, MAY 14, 2009

10:00 A.M. - 5:00 P.M.

HOTEL CHECK-IN • CONVENTION REGISTRATION

5:00 P.M. - 9:15 P.M.

TOUR & DINNER AT STEAMBOAT ARABIA MUSEUM

Bus transportation provided

FRIDAY, MAY 15, 2009

8:30 A.M. - 1:00 P.M.

TOUR OF PAUL KELLY, JOHN SCHOTT & FAIRBANKS SCALE COLLECTIONS

Bus transportation provided with assigned time • Lunch on your own

1:30 P.M. - 6:00 P.M.

ON YOUR OWN OR OPTIONAL TOUR (SEE REGISTRATION DESK)

6:30 P.M. - 7:00 P.M.

COLLECTORS GET-TOGETHER • OFFICIAL WELCOME

SCALE TALK • ALBUM-SHARING • CAMARADERIE

Light snacks provided

Salon E

SATURDAY, MAY 16, 2009

9:00 A.M. - 12:00 NOON *Ambassador*

WEIGHTS & MEASURES

Bob Whittenberger, Retired, State of MO Weights & Measures

CONSERVATION & RESTORATION OF SCALES & WEIGHTS

Dr. Paul Benson, Conservator, Nelson-Atkins Museum of Art

THE ENGLAND TRIP: HOSPITALITY, COLLECTIONS & PURCHASES

Kurt Beyreis

LET'S GO SURFING!

Highlights of the ISASC website

Carol Hayden

12:00 P.M. - 1:00 P.M.

LUNCHEON BUFFET

Atrium

R A M

2:30 P.M. - 5:00 P.M.

SILENT AUCTION

*Followed by Let's Make a Deal
Coordinated by Eric and Judy Soslau
Salons E, F, G, & H*

6:30 P.M. - 'Til...

GALA RECEPTION AND BANQUET

Pre-Conference Area & Ambassador

SUNDAY, MAY 17, 2009

9:00 A.M. - 12 NOON *Ambassador*

"SHOW AND TELL"

Special treasures from our members • Moderator: Jerome Katz

BUSINESS MEETING

Officer reports, floor discussions and comments

12:15 P.M. - 'Til...

LUNCHEON BUFFET

Atrium

Balance of day free time

1:30 P.M. OFFICER'S MEETING

Missouri Board Room

MONDAY, MAY 18, 2009

OPTIONAL POST CONVENTION TOUR TO OMAHA, NEBRASKA

8:00 AM *Bus Departure*

11:00 A.M. - 12:30 P.M.

TOUR LES SCHNEIDERMAN'S MUSEUM

1:00 P.M.

LUNCH AT ANTHONY STEAK HOUSE

RETURN TO HOTEL

SEE YOU NEXT YEAR IN PORTLAND, OREGON!

IN ATTENDANCE*

Stephen and Kathy Barnett, Ellicott City, Maryland

Steve and Karen Beare, Wilmington, Delaware

Jan and William Berning, Sycamore, Illinois

Robert Beuhler, East Moriches, New York

Kurt and Ann Beyreis, Maurertown, Virginia

John and Betty Cheeseman, Dorset, England

Dick and *Peggy* Clark, Portland, Oregon

Jim Dietrich and Joyce Glazier, St. Charles and Saginaw, Michigan

Mary Easton, Downers Grove, Illinois

Leslie and Elaine Firth, Mercer, Pennsylvania

Robert Foster, Dayton, Nevada

Harry and Jane Hawley, Marion, Iowa

Carol and Bob Hayden, Austin, Texas

Gregory and Judy Hill, Mira Loma, California

Richard Hoppe, Waynesville, Ohio

Fred and Jacquie Huhman, Jefferson City, Missouri

Irving and Rhoda Isicoff, Ocala, Florida

Arlene and Bill Jacobson, Bayside, New York

William and Nancy James, Orinda, California

Robert Jibben, Minncapolis, Minnesota

Jerome and Mary Katz, Downingtown, Pennsylvania

Patrick and Judith Kelly, Kansas City, Missouri

David Kral, Iowa City, Iowa

Charles and Helen Lamlein, Normal, Illinois

Peter and Dian Laycock, Toronto, Ontario, Canada

Ross and Winsome Leadbetter, Chapel Hill, North Carolina

Clifford and DeVec Lushbough, Aurora, Colorado

Jan and Eva Macho, La Canada, California

Clem and Katharine Monday, Oroville, California

**Each listing indicates the member's name first.*

Names of members attending their first convention are in italics.

IN ATTENDANCE*

Greg Moss, Waterford, Michigan
Mary Anne Murphy, Pittsburgh, Pennsylvania
Catherine Panagakos, Greenville, South Carolina
Larry Press, Jacksonville, Florida
Joan Pugsley, Three Rivers, Wisconsin
Dale and Donna Reed, San Leandro, California
James Reeve, Iowa City, Iowa
Allan and Aviva Rodin, Northfield, Illinois
Shirley and Utz Schmidt, Palms, Michigan
Leonard Schneiderman, Omaha, Nebraska
Don and Donna Schoenly, Glen Ellyn, Illinois
John, Lois and *Debra* Schott, Parkville, Missouri
Don Shaw and Donna Meeks, Cedar Rapids, Iowa
Shirley Silva, Danville, Colorado
Ben and Mary Smith, Jackson, Michigan
Eric and Judy Soslau, Austin, Texas
Lorraine Texeira and Mary Krause, Pleasanton, California
Garrett and Lorie Turrall, Rochester Hills, Michigan
Tom Van Natta, Decatur, Alabama
Dcuell Wall, Ventura, California
Phil Wehman, Chattanooga, Tennessee
Ruth Willard and *Gayle Higaki*, San Matco and Oakland California
John Young, Beaumont, California

CONVENTION NOTES

1. Bidder numbers for the Silent Auction are on the back of the name tag. Please wear tag to all events. If a seller needs additional bid sheets, contact Bob Jibben, Jan Berning, or Bill James.
2. Be sure to bring your BUS TICKET FRIDAY, MEAL TICKET to the BANQUET and your MONDAY LUNCH TICKET to Omaha.
3. Attire: Casual for days and evenings. Dress-up suggested for Saturday night banquet.

CONVENTION COMMITTEE

Bill James and Bob Jibben - Chairmen
Jan Berning, Carol Hayden, Fred Huhman, Patrick Kelly,
Les Schneiderman, John Schott and Judy Soslau



Founded September, 1976

3616 Noakes St. • Los Angeles, CA 90023 • USA

Officers 2009

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Vice Presidents.....	Kurt Beyreis
	Robert Jibben
	Jerome Katz
	Mary Anne Murphy
Secretary.....	Carol Hayden
Treasurer.....	Leslie Firth

Executive Secretary.....	Jan Macho
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A Balanced View

ISASC 31st Annual Convention

The 31st annual convention of the International Society of Antique Scale Collectors was held in Kansas City, Missouri, from May 14th to May 18th. The convention was attended by 85 enthusiastic scale collectors who were warmly welcomed to Kansas City by local members Pat Kelly and John Schott. As usual it was an overwhelming success. Visits to the Steamboat Arabia Museum, the collection at Fairbanks Scales, as well as the Kelly, Schott and Schneiderman scale collections were among the highlights. The regular activities: the collectors' get-together and album sharing, Saturday morning presentations and *Show and Tell* were up to their usual excellence. Everyone had a wonderful time and enjoyed the opportunity to spend some time with other avid scale collectors. Congratulations to the Convention Committee chaired by Bob Jibben and Bill James for a job well done. Out-going ISASC Treasurer Leslie Firth was honored at the annual banquet. He was presented with a rare "Gump" grain scale in appreciation for the six years of outstanding service to ISASC as its treasurer.

Convention 2010, Portland, Oregon

The Portland Convention Chairman, Dick Clark, addressed the attendees of the Kansas City convention and gave them an overview of what is in store for them in Portland for the 2010 convention. He, along with his convention committee, has planning well underway. I hear the month of May is a perfect time of year to visit this garden city. The hotel has been booked and an exciting program is being prepared. Mark your calendars now for May 20th to May 23rd 2010. Among the activities planned is a visit to the famous "Spruce Goose" aircraft built by Howard Hughes which is housed in a museum near Portland.

Regional Meetings

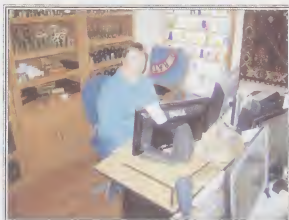
Michigan Regional Meeting, August 22, 2009, at the home of Greg Moss
2194 Ostrum Drive, Waterford, MI 48328 gmoss244@comcast.net

Midwest Regional Meeting, August 29, 2009, at the home of Bob Jibben
1821 West 49th Street, Minneapolis, MN 55419 rajibben@yahoo.com

All members are welcome to attend. Enclosed in this mailing are flyers with further information.

The Scales of Austin Texas

This February Dian and I had an opportunity to visit our ISASC friends in Austin, Texas. We had wanted for a long time to see the collections of Carol and Bob Hayden and Judy and Eric Soslau. The Haydens and Soslaus have been active members of ISASC quite some time. Judy has been a member of the Convention Committee since its inception and manages the financial end of the annual *Silent Auction* and *Let's Make a Deal* activities. Carol has served on the board of ISASC for the past four years as secretary and editor of the ISASC website.



Austin, Texas February 2009

- Carol ISASC Web Manager at her Desk
- Eric relaxing among his scale collection
- Carol, Judy, Bob, Peter and Eric at the Soslau's Home

We were warmly welcomed on a nice sunny day with very agreeable temperatures for February and were treated to a tour of Austin, the capital of Texas, located on the beautiful Colorado River. Over the weekend we enjoyed several wonderful meals and the odd glass of wine as we settled in to view their collections.



The Hayden Collection

The Hayden Collection has a heavy emphasis on weights and measures. They have hundreds of weights of every description from all over the world. They are beautifully displayed throughout their home. That in no way diminishes the extent of their scale collection, which is also very impressive with treasures that many of us would love to have in our own collections. On the

staircase leading to the second floor there is an impressive display of several sets of bell weights, mostly British, ranging from the one pound up to the fifty-six pound. Many scales are nicely displayed all through their house on shelves and on several interesting display racks.

Carol and Bob have several other very interesting collections. In addition to scales and weights, they have collections of glass insulators, candy jars, spool cabinets, sterling serving utensils and old drugstore candy cases. A portion of their glass insulator collection is very nicely displayed in the window of their



office where the sunlight shows off their vivid colors. A visit to see the Hayden Collection any time that you are in the Austin Area is a must. I am sure that they would love to show you their collections.

The Soslau Collection

Judy and Eric have a wonderful collection of antique scales they have been accumulating for over twenty five years. Judy tells me their scale collection grew out of an interest she had in antique apple peelers. As with so many of us, the allure of a nicely polished brass scale caught her eye, while searching for apple peelers, resulting in their first scale purchase.



Their first scale, still nicely displayed in their home, is a grocer's scale with a nice brass pan she and Eric found in upstate New York.



Their collection covers almost all types of scales. Their scales are nicely displayed in almost every room in their home. A tour conducted by Judy and Eric as they take you from one room to the next is a treat to

behold. Big or small they pretty much have it all covered. Among their scales is a very impressive selection of ladder and rolling pin scales which were eyed with envy by this postal scale collector.



Like many of us Judy and Eric have a number of collections. For the uneducated, such as myself, their collection of antique apple peelers is fascinating. Also not to be missed are a number of pieces of art created and crafted by Eric in his art studio and work shop. Once again a must stop if you are in the Austin area.

Finance Committee

As of June 1, 2009, Kurt Beyreis assumes the role of treasurer of ISASC. Kurt has requested that we establish a Finance Committee to assist him in the management of the Society's finances. I would ask any member who has an interest in serving on the committee to contact Kurt. He can be reached by email at kbevreis@aigmail.com or by phone at 703-739-0508. Kurt is anxious to get the committee established as soon as possible. Please contact him at your earliest convenience if you wish to be considered for a spot on this committee.

Equilibrium Opportunity

From time to time a number of you have asked about acquiring additional copies of EQM. Well, here is your chance. As you may know we have an excess inventory of past issues. We will be running a promotion on EQM and you will be able to purchase past issues for \$2.50 each, plus shipping. Accompanying this letter is a list of EQMs available. They will be sold on a first come, first served basis. In addition to the cost of the EQMs you will be charged for shipping which will be mailed at media mail rates. Please place your order as soon as possible by contacting Cora Caley at 323-263-6878 extension 18 or by email at dialcora@yahoo.com. Cora will advise you of the total cost of your order including shipping. Payment should be sent to Kurt Beyreis at 1730 Van Buren Road, Maurertown, VA, 22644.

The Saga of a Toledo Scale

Member Jack Young spent a career as a scale man working for many years in Hawaii where he sold and serviced Toledo scales. Now retired and a collector of scales he is always on the lookout for scales to add to his collection. Late last summer, on eBay, he saw a Toledo grocer's scale that he had never seen before. It had a two pendulum mechanism instead of the customary one pendulum variety. Jack had to have it so he could take it apart and figure out just how it worked. He bid and won. The only problem was that the scale was in Ohio and he was in California. After a lengthy telephone conversation with the lady from whom he purchased it, it was agreed that she would hold it for him until he could pick it up in May of this year as he was attending the ISASC convention in Kansas City. He left sometime in April and started his trek to Ohio. He arrived and took delivery of his scale. Weighing in the area of 100 pounds, getting it in his car was a challenge. It was too big to go into the trunk or the back seat. The only option was to put it in the passenger seat in the front. Jack and the seller managed to get it onto the front seat where Jack secured the scale with the safety belts.



He then struck out for Kansas City. Often on the drive people would peer at Jack's passenger with a troubled look. Jack made it to the convention proud to have received his prize. He wanted to present it for *Show and Tell* and did so by parading his friends out to the parking lot to see his new scale. There was no way he was going to bring it into the meeting after successfully securing it to the front seat. After all he still had 1500 miles to drive. It is amazing how we are driven by our love of scales. Good for you, Jack. I hope you enjoy your new treasure.

For Sale

Ted Stein is selling his Library of scale related items. Please find his letter included in this mailing.

Welcome To New Members

I would like to take this opportunity to welcome the following new members and to encourage them to contact any of the members of ISASC should they have any questions.

Dale & Jane Lewis
Zamir Margalit
James & Carla Mattson

University Heights, OH
Edgewater, NJ
Lenexa, KS

Have a great summer as you continue your search for the next special addition to your scale collection. Bye for now.

Peter Laycock,
President ISASC



EQUILIBRIUM

QUARTERLY MAGAZINE OF THE INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

2009 ISSUE NO. 3

PAGES 3489 - 3516



Cover Picture

As collectors, we all know that rarities turn up in the strangest places and at the most unexpected times. Such was the case with these three bell weights.

Who do they belong to?

Where were they found?

What makes them so rare?

Who made them?

When were they manufactured?

Read all about the exciting story of the weights on pages 3509-3513.

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Article submissions are preferred in MS Word with Times New Roman Font size 12.
Photos are best in 300 DPI Jpegs in a separate file with a maximum of 3 photos per Email.

Hyam Hyams Double Rocker

BY DIANA CRAWFORTH-HITCHINS

Or How I Got a Treat

In 2006, I was told of a broken sovereign rocker on ebay. The picture was puzzling. At the back was a squat morocco-leather box that looked very much like a box used by Winfield or Mordan for their coin scales. At the front was a ½ sovereign single platter beam on an H-shaped base and inside the box was a second single platter rocker.

After a discussion with Andrew, my son, I decided to "have a punt", in other words, to bid for what might be a piece of a rocker plus some rubbish. I gambled with rather a high sum for those bits, and wondered whether I had gone mad. But my worries vanished when the box arrived.



Figure 1. The ebay picture.



Figure 2. My Hyams repaired.

Figure 3. A second example of the double-beam rocker sold by Hyams. I show it because the stamping of the name is better than on mine. Note the caps over the ends of the bearings, suggesting that there were second thoughts about construction.



The box was exactly the right length for the rocker beams. Both fitted into it, as if the box was one of two matching boxes. One beam had on it "H HYAMS, 22 CORNHILL" and "LIGHT SOV DETECTOR". The other beam had no maker's name, but the platter was stamped "½ SOVEREIGN". The H of brass had four holes drilled into it that looked like holes for bearings. It took me several minutes to realise that both beams went into the one cube, and that the pippin steel pivots had broken.

If one beam was put into the top of the cube, and the other beam was reversed and put into the bottom of the cube, the poises slotted together. So when one beam was in use, the other beam formed the base. How ingenious!

Figure 4. ⚔ The beam for the lighter half-sovereign, with the smaller poise.

Fortunately Andrew has a friend who was once a jeweller, and is now a superb repairer of fine antiques. He took on the fiddly task of making new fulera. I was charmed when the box came back to me with one double rocker in it.

So my money was not wasted. I had a very rare double rocker by Hyam Hyams. But I knew very little about Hyam Hyams. I knew he made ordinary rockers; in fact, we already had one, but why go to the extraordinary lengths of making a double rocker in a leather box? I put this puzzle aside, thinking that one day I would investigate.



Figure 5. ⚔ Side view showing the way the two poises are fitted together without interfering with the action of either. Note the brass pegs covering the bearings, filed flat.

Then a few months ago, a wonderful correspondence started between Mike Foster and me. He is writing a book on sovereign rockers, specifically about the Crown marks on them. He has drawn all the variations of Crowns, and correlated them with the names on the rockers (and/or their boxes) and now has sufficient evidence to know who most of the Makers were and who were actually Retailers. This attention to detail will benefit all collectors of rockers when Mike publishes, and I can now state with certainty that Hyam Hyams did not make the rockers that bear his name. John Bourn made them.

This confidence is based on the Crown found on Hyams' rockers being compared with the crown on the Bourn $\frac{1}{2}$ sovereign rocker from Mike's collection. Additionally, the $\frac{1}{2}$ sovereign rocker proves that Bourn made single-platter rockers, that could possibly have led to the idea of having two single-platter rockers on one pillar.

But why did Hyam Hyams not make rockers himself? He had the necessary manual skills available in his workshop if he really was, as stated in Trade Directories and in the catalogue of the Great Exhibition of 1851, a jeweller, clockmaker and manufacturer of opera glasses.

He had a shop dealing in bullion from 1818, in Houndsditch, an area of London lived in by immigrants. Those immigrants would need a sovereign rocker to protect themselves from fraudsters trying to pass off fakes to new-comers to this country. They would pay 6d or 1/- for a rocker, to protect themselves from a loss of 10/- (a half-sovereign) or 20/-, (a full sovereign). But would they have paid for a double rocker, at a much higher price? I doubt it. Their lives were too precarious to spend money on luxuries.

Hyam Hyams moved from Houndsditch to Cornhill, exactly opposite to the Royal Exchange. Now his customers were much more prosperous, but still very aware of the need to protect themselves. Many of the merchants going to the Royal Exchange would be foreigners with little or no English money in their pockets. So they would go into "The Old Bullion Office", the name of Hyam Hyams' shop, to exchange their foreign money, to get rid of their light coin, and, "Oh, yes, I'll have a sovereign balance while I'm here". Would Hyam

Hyams have brought out his 6d, economy version? Maybe not. He would bring out his charming little double rocker in its smart red leather box.

But that does not explain why Hyams bought his rockers from Bourn. One possibility is that Hyam Hyams never made anything, as he was a bullion dealer, even though the Catalogue of the Great Exhibition called him an inventor and manufacturer. Another possibility is that he made jewellery and more exalted items, but found it cheaper and easier to buy in rockers specially ordered from Bourn, who was making rockers under his own name anyway.

John Bourn lived 110 miles away in Birmingham, at his foundry at 31 Lionel Street. He was a brass and moulding founder from 1816 (the year the sovereign was first minted) until 1850. He made brass furniture (handles and decorative friills) for cabinets, and would have sent them in parcels down to London. He must have had numerous contacts in London, so Hyam Hyams would have had no trouble in arranging for Bourn to make his rockers and regularly deliver them by carrier (or by railway after 1838).

It is even possible that Hyam Hyams went up to Birmingham to buy the jewellery that he sold under his own name in London. Then he could easily discuss business with Bourn.

So one little pile of bits on ebay led me to some fascinating speculation and a deepening friendship with Mike Foster. I just have to be very careful not to drop the double rocker again, as those pivots are very flimsy and would snap immediately.²

Notes & References

1. Foster, M.S. *Sovereign Rockers, Part 2*, forthcoming.
2. Since preparing this article, two other examples of Hyams double-beam rocker have been described to me.

Acknowledgements

With thanks to Andrew Crawforth and Mike Foster for their thoughtful contributions. Thanks also for Mike's photographs.

Hyam Hyams Rockers made by John Bourn?

BY MICHAEL FOSTER

Hyam Hyams, the London jeweller and bullion dealer, retailed sovereign rockers with his 'H. Hyams 22 Cornhill' label made for him by John Bourn, at his foundry at 31 Lionel St., Birmingham.

This statement is partly based on my study of the Bourn Crown found on H. Hyams rockers. The original Bourn rockers were made with the Bourn Crown on the poise and the same Crown is also found on rockers with the names of the follow-on owners of the Bourn Foundry at 31 Lionel St., Birmingham (the topic for a separate article):



Fig. 1. Bourn Crown Drawing.



Fig. 2. Bourn Crown on a Bourn Rocker.



Fig. 3. Bourn Crown on a Hyams rocker.



Fig. 4. ▲▲ The Original Bourn Rocker.

There are eight different versions of the dual platter 'H. Hyams 22 Cornhill' rockers currently in my database and collection.¹ They are all linked style-wise to the original, labelled Bourn rocker. Five of the versions bear the Bourn Crown on their poise.

All the H. Hyams' rockers have Bourn's style of base. There is quite a variation in finials and platter cut-aways. Included here are three H. Hyams from my collection and five others from my image database.



Fig. 5. ▲▲ Hyams Type 1 - Bourn Crown, H. Hyams in curve, curved-notched platters and spatulate finial.



Fig. 6. ▲▲ Hyams Type 2 - Bourn Crown, H. Hyams in curve, curved-notched platters and shortened spatulate finial.



Fig. 7. ▲▲ Hyams Type 3 - Bourn Crown, H. Hyams in curve, curved-notched platters and no finial.



Fig. 8. // Hyams Type 4 - Bourn Crown, H. Hyams in curve, rectangular-notched platters and two-horn finial.



Fig. 9. // Hyams Type 5 - Bourn Crown, H. Hyams in curve, rectangular-notched platters and no finial.



Fig. 10. // Hyams Type 6 - No Crown, H. Hyams straight, side cut-off platters and shortened spatulate finial.



Fig. 11. // Hyams Type 7 - No Crown, H. Hyams straight, curve-notched platters and no finial.



Fig. 12. ♠ ♠ Hyams Type 8 - Nickel-plated, no Crown, H. Hyams straight, curve-notched platters and spatulate finial

The casting moulds of these rockers, created and used by Bourn, were probably custom-made and exclusive to, or owned by Hyams, as there are currently no known versions of these rockers without the 'H. Hyams 22 Cornhill' label on them.

Speculation suggests that H. Hyams placed a new order with Bourn, for a new style/type of rocker every one to two years, depending on sales volumes. So the current eight types could be the Hyams 'Store' Sovereign Balance design, covering perhaps the fifteen years that Hyams operated a business at 22 Cornhill from 1828-1843.

John Bourn also made the rare and unique dual beam/single-coin rocker for H. Hyams.

This statement is partly supported by the half-sovereign rocker labelled Bourn from my collection, which proves that Bourn made and sold single-coin rockers of his own.



Fig. 13. ♠ ♠ Bourn single-coin half-sovereign rocker



The Hyams rocker with dual beams, each for a single-coin, made during his time at 22 Cornhill, has no crown stamp as shown in the following images;



Fig. 14. // Hyams dual-beam/single-coin rocker - beam for sovereigns.



Fig. 15. // Hyams dual-beam/single-coin rocker - beam for half-sovereigns.

but it does have stamps on the half-sovereign platter that have the same number and letter imperfections as on the Bourn half-sovereign platter. The same letter and number stamps were used for the stamping of both.



Fig. 16. // Hyams half-sovereign platter above.



Fig. 17. // Bourn half-sovereign platter above.

I believe that we can conclude from all of this information that H. Hyams was a retailer of a variety of sovereign rockers made for him by John Bourn, brass founder of Birmingham.

Notes & References:

1. Foster, M S, forthcoming book *Sovereign Balances 2 – Standard Rockers and Crowns*.

Acknowledgements

With thanks to Norman Biggs, Graham Weeks and the late Wolfgang Schilde for helping me with photos of items in their collections. Special thanks to Diana Crawforth-Hitchins for her assistance and patience.

Author's Biography

Michael S. Foster, a Canadian Electronics Engineer and past President and CEO of several high-tech semiconductor and telecom product companies, has been a collector for most of his life. For the last four years he has focused on collecting 19th century

English sovereign balances and got interested in the crown stamps found on the poise of over 85% of the surviving sovereign rockers. Only about 50% have a name on them, and it often isn't the maker's. Mike has built an image database and collection of sovereign rockers and has researched the crowns as a means of identifying the makers and the retailers. He has also researched the locations of their foundries or shops and their years of operation. His work *Sovereign Balances 2 – Standard Rockers and Crowns* will be available shortly.

Review

Weights and Weight-like Objects from Caesarea Maritima by Lionel Holland, pub. Hadera, 2009. 88 A4 pages with soft covers. 312 black & white photographs of individual items, plus 18 photographs of clusters of items. Some charts, tables and graphs. Available at £25 plus P & P from Galata Press, The Old White lion, Llanfyllin, Powys, SY22 5BX, United Kingdom.

Here is a book on a subject that I know embarrassingly little about, so I picked it up in the expectation that I would need to do some hard work. Two hours later I put it down feeling as if I had read a first-class novel. I had been transported to an unfamiliar country and a range of cultures, gently lead to appreciate a multitude of weight-types, and never noticed that I was absorbing knowledge all the time.

Reading the introduction alone made me happy. Here is an author who understands his readership and who writes in a plain straight-forward style. He makes no claims to be infallible, but presents his case with clarity and integrity.

A man has my respect who can write, *Anything written about ancient weights and measures (not excepting this book) should be read with severe critical scrutiny, in a mood of deepest scepticism. What might at first appear to be an objective, matter-of-fact account, may in fact be loaded with errors, misrepresentations, and even bare-faced falsehoods.* See pages 3-4 for his justification for writing this.

Holland thinks for himself, having studied the literature available. He does not regurgitate previously published material without careful thought and assessment of weights with which he is familiar.

Before each weight or category of weight, he sets out the context, and after each batch, he mulls over the possibilities and discusses the problems associated with them. He makes it absolutely clear when he is hypothesising, and he keeps his ruminations within sensible bounds.

Very few authors write with such clarity and enthusiasm. Comparing Simon Bendall's book on *Byzantine Weights* with Hollands's, Bendall has a more academic approach, but Holland taught me more. Holland's photographs are first-class, given the difficulties of high-lighting the marks and inscriptions on corroded, battered weights. Bendall put drawings beside photographs of worn weights, whereas Holland used talcum powder or gouache to emphasise faint dips. Both methods worked. The glass weights presented Holland with a particularly difficult problem, that he solved ingeniously by taking a female cast then a male cast. When the male cast is photographed, the reflections are not in the photograph, and the inscriptions show clearly. (I shall use his technique in the future.)

Given the complexity of the many weight-systems used by the various cultures that over-ran or utilised the port of Caesarea Maritima, it is amazing that he has managed to produce a coherent study on which we can build.

The private keeping of any historical object is now banned in Israel, so Holland and his friends could not, these days, assemble and study their history. This means that only curators and archaeologists can freely handle, discuss and thus write papers on recent finds. But curators have other, more elevated subjects to cover, so ignore the immensely important place of weighing in any society. We must applaud Holland for tenaciously studying these weights and writing this superb book.

DIANA CRAWFORTH-HITCHINS

Not for Weighing!!

BY TREVOR CHAMBERS & BRYAN MAPLETOFT

Bryan and I have reasonable sized collections of scales and weighing machines that include some instruments that at first sight appear to be some sort of scale but a closer examination reveals that they are Not for Weighing but for some other uses.

Many of these instruments have much in common with conventional scales. Most use the helical coil tension spring to resist the load. Some use the balance beam. Most have a dial or graduated scale for measuring and a moving pointer. Some also have a slave pointer to record the maximum load. They are made by companies which we associate with scale manufacture i.e. Salter's of Wolverhampton or Chatillon of New York or Avery of Birmingham.

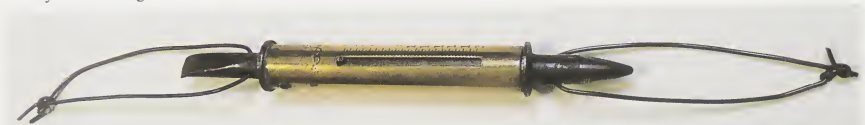


Figure 1. Lewis Gun Tension Tester

The first of these instruments is shown in Figure 1. This is made by Salter's and carries the UK Crown Property broad arrow logo indicating a government or military application. It resembles a typical spring balance produced by that company except that the holding ring is replaced by what is best described as a screw-driver blade (the one illustrated is distorted) with a hole through the side. A round spike, again with a hole through the side, replaces the load hook. It is graduated 0 – 20 x 1/2. The units are not specified but have been measured as lbs. This instrument is illustrated in EQM No 2 of 1983 page 552 and identified as a *Tension tester for use with a Lewis gun in the First World War*. Note, the string loops are replacements.

The Lewis gun, which was developed in the USA in 1911, was introduced into the British Army in 1914 and was a significant development in terms of lightness and convenience of use. However, this seems to have come at the expense of the need for regular maintenance involving dismantling and adjustments. This required tools to undo screws, levers to separate parts and a spring balance to measure the tension of the return spring and set it within the limits of 10 to 14 lbs. It would appear that Salter's designed this multi-purpose tool to undertake the maintenance tasks. The string loops enable the device to be used for measuring the tension. However, ref 1 shows that by 1940 the British soldier had shown his ingenuity, the maintenance manual of that time refers to the use of a knife for the screws, a bullet head for levering items apart and an ordinary spring balance for spring adjustment.



Figure 2a. Telephone Exchange Relay Tension Tester, top view.

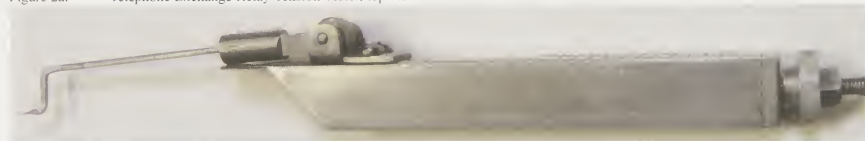


Figure 2b. Telephone Exchange Relay Tension Tester, side view.

The second instrument is shown in Figure 2. This again is made by Salter's and also carries the Crown Property broad arrow and is marked 1H/58. The screw at the end preloads the spring contained within the body. This varies the force that needs to be applied at the end of the thin metal probe for the device to "trigger" very much like a conventional torque wrench. The item is graduated 0 to 100 gms (determined by measurement). A Telecommunication Engineer friend tells us that this device was used in the pre-digital telephone exchanges where all of the switching was done using electromagnetic relays. This instrument was used to measure the tension of the relay contact springs for opening and closing. Different relays would have their own characteristics hence the need for a device that could be adjusted. We also have another instrument, shown in Figure 3, again made by Salter's and carries the additional marking "GPO no 9 SG/44". GPO refers to the UK General Post Office that had the monopoly on all telecommunications up to the late 1980s. It is graduated 0-6 lb x $\frac{1}{4}$ lb and carries a slave pointer to record the maximum value. The markings suggest a telecommunications use but we have yet to identify what it was used for.



Figure 3. Telephone Exchange – unknown use.



Figure 4. Recording Trigger Pull Gauge

The third instrument again manufactured by Salter's is shown in Figure 4. It is graduated 0 – 16 lb x $\frac{1}{4}$ lb and carries the UK Crown Property broad arrow logo. This is identical to that instrument shown on page 147 of ref 2. However, we believe that the instrument described in that book as a Yarn Testing scale and which is shown with some knitting wool draped over it has been wrongly identified. We cannot see any feature of this instrument that would make it suitable for testing yarn. Testing for what? What characteristic of the yarn was it intended to test or measure. If it were, say, diameter then another kind of instrument would be appropriate. If it were for testing weight per skein or per unit length then a standard spring balance would have sufficed. Further, what function is the roller at the load tip serving on a yarn test? The instrument shown on p 147 of ref 2 shows that it was fitted with a sliding indicator to record the maximum value. This feature is missing from our example.

After taking verbal advice and research on the Internet we are of the opinion that this is what, in modern parlance, would be called a "Recording Trigger Pull Gauge" used for measuring the force necessary to actuate the trigger of a firearm. Indeed such items are still made and marketed for the same purpose today – see ref 3. We are convinced that this is the use for the instrument shown in figure 4. The shape of the load arm facilitates fitting the instrument around the stock of the gun and the roller pulley fits over the trigger and minimises inaccurate readings due to friction at the point of application of the load. The safety and accuracy of a rifle or shotgun is strongly influenced by the consistency of operation of the trigger and the force needed to operate it. UK manufacturers of shot guns advised that the trigger pull force should be about 50% of the weight of the gun i.e. about 3 to 5 lb. The recommended force depends upon the type of gun; military rifles up to 7 lb, and revolvers up to 15 lb. A firearm with a "hair trigger" is lethal, hence the need for a special instrument to measure the trigger pull force.

Figure 5a. Chatillon Dynamometer.



Figure 5b. Chatillon Dynamometer – rear view.





Figure 6a. // Salter's Tension Testing Machine- front view.



Figure 6b. // Salter's Tension Testing Machine- rear view.

The next instrument in our collection is shown in figure 5 a and 5 b. This was purchased from Florida USA on Ebay in autumn 2008 and was manufactured by Chatillon of New York USA. The seller described it as "a scale" but from the photographs it clearly wasn't. Sadly the seller ignored any attempts to enter into a dialogue to try to determine what the intended use was. The intriguing feature of the instrument was the shape of the spring, totally different to anything seen before. It is graduated 0 – 2000 lb x 10 lb. Yes 2000 lb or nearly 1 ton!!! It is fitted with a slave pointer to record the maximum. What was it used for and how? There isn't any obvious point of application of the load or restraint except for the "ears" in the spring on either side of the dial. These show that the inside surface was polished quite smooth by usage. This suggested that ropes had been passed through each "ear". Further clues as to the use came during a holiday in South Africa when a similar item was seen. This is shown in Figure 6a and 6b. This is a Salter's Tension Testing Machine and is graduated 0- 2000 lb x 20 lb and as shown this instrument uses the traditional coil tension spring as the load resistance. The shape of these two instruments suggests that they had the same purpose of measuring tension in something. The fact that there were at least two products on the market of markedly different design, from both sides of the Atlantic and with similar measurement range suggests that the use was fairly common, but what. We consulted Diana Crawford-Hitchins, the UK Information Officer, who advised us that the Chatillon catalogue for 1894 shows this instrument to be a dynamometer used for ascertaining the draft of ploughs, wagons, mowing machines etc. It was available in ranges from 500 to 5000 lbs. Diana also advised that the Salter version with the absence of the "knot" implies a date prior to 1884. Again the instrument is described as a dynamometer used for testing the draught of ploughs, carriages etc. This shows that the instrument should have a slave pointer which is apparently missing from our example. Ref 4 shows that the Salter version was still being sold as late as 1958. This clearly shows that the instrument had found other uses. One use that immediately comes to mind is the proof loading of hemp string, cord and rope during the manufacture process or as a means of testing the continued safety of lifting slings. The polished ears of the Chatillon instrument would be consistent with these uses and the slave pointer serving to record the maximum tension.



Figure 7. Front and rear views of Force measuring dynamometer possibly from an Avery Engine Power Dynamometer.

A variation on this theme of dynamometers is shown in Figure 7. There are several interesting features. Firstly, the instrument carries both the name of W & T Avery Ltd and the Salter knot logo. This would suggest that the item is from a larger piece of machinery made by Avery but which incorporated a spring balance type of device made by Salter. The second interesting feature is that whilst the dial is graduated 0-240 lbs x 1 lb on the inside and 0-1200 x 5 lb on the outside, the actual measured load is 24 lbs. This characteristic suggests that the instrument was measuring a load at some distance remote from the point of application by means of a lever mechanism with lever ratio of either 10:1 or 50:1. We have not been able to find a full explanation but we believe that the machine may have been an aero-engine power dynamometer used extensively in the early days of aviation to test the power output of the reciprocating aero-engines. Such machines were manufactured by Heenan-Froude in the UK. Did Avery try to break into this market?

Finally, Figure 8 shows something very different, it is a counting scale made by Avery. Used right up to the advent of the electronic counter, this device removed some of the tedium from the job of counting large quantities of small items e.g. screws, nut, bolts, nails etc. The instrument has three pans or scoops, the bottom larger one contains the quantity requiring to be counted. The two smaller ones provide the means of counting the number in the larger pan. The top right hand pan is marked with a ratio of 12:1; the left hand pan is marked with 144:1. In use the operator estimates the number of items in the larger pan and adds a number of identical items to one of the other pans until balance is achieved. The number of items in the larger scoop is then determined by multiplying the number added to the smaller scoop by the ratio of that scoop. So for example, 1440 items in the larger scoop are counted much more quickly by merely counting 10 of the same item and placing them in the appropriate small scoop.



Figure 8. ▲ ▲ Avery Counting Scale.

Notes:

Bryan and I are not experts so we would welcome comments and advice from other ISASC members who may have more information to add to our story.

The authors would like to thank Diana Crawforth-Hitchins for her assistance on some parts of this article.

Editors' Note:

Other Dynamometers appear in EQM on pages 224-225, 547, 2169-2170 and 3150.

References:

1. *Lewis Machine Gun for the Home Guard* - 1940.
2. Berning, Bill & Jan. *Scales - A Collectors Guide 2nd Edition*.
3. Brownells, firearm accessories supplier- www.brownells.com.
4. Buck and Hickman Limited Tools and supplies Catalogue 1958.

Authors' Biography

TRIVOR CHAMBERS is a retired Aeronautical Engineer and has been collecting scales as an additional retirement hobby for the past 12 years. He is the son of a former weighing machine mechanic who worked for W & T Avery Ltd after serving an apprenticeship with Henry Pooley and Sons Ltd in Bristol UK, starting in 1918. Trevor remembers accompanying his father in the late 1940s on weekend overtime work servicing the weighbridges in the many stone quarries in the Bristol area. Trevor is mainly interested in collecting postal and special purpose scales but can be seduced into buying other interesting objects!! However, his first acquisition was an Avery barn scale bought at a local farm auction.

BRYAN MAPLETOFT is a retired toolmaker in the Aerospace Industry and started collecting in 1983 when on holiday in Cornwall where he bought his first scale, a Salter spring balance, at a flea market in Truro. Discovering that it was over 100 years old he had caught the bug. He is interested in all types of scales and he now takes his collection and displays it at Steam Rallies and County Shows in the South of England. He is a regular attendee at the Great Dorset Steam Fair.

Portable Plastic Paper Balance from 1960s

BY DAVEN CHAMBERLAIN

Recently I was asked to assess two dozen pallets of unwanted paper-testing apparatus at a local mill. At the bottom of one water-damaged container I found the illustrated balance, in its original red card box complete with instructions.

It consists of a central beam of black plastic upon which are etched and printed the values for grammage, the scale running from 0-400. This is balanced carefully on two sharp metal pins housed on a lower support structure, also of black plastic.



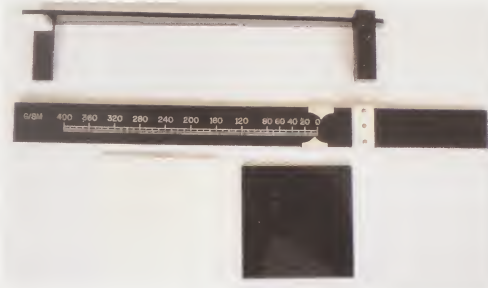
The sample to be tested is sandwiched between a black plastic template of 7x7cm and a white plastic base plate of slightly larger proportions, pinioned by two needles from the template which pass through holes in the base plate and locate the entire sandwich correctly on the black central or balance beam. Prior to the whole assembly being positioned on the balance, the paper sample must be trimmed with a sharp blade. (Score marks on the upper surface of the white plate are testament to it having seen limited use).



In operation the top pointer on the beam is maintained at zero, while the other is slid along until balance is achieved, at which point the grammage is read from the scale using this lower pointer.

Despite the atrocious conditions in which the instrument was found it is in remarkably good condition, although corrosion has accounted for the tip of one of the two sharp pins on which the central beam balances,

which means the beam no longer sits correctly. There is also very slight warping of the balance beam.



On the back of the balance beam is the inscription 'Made in England by Rex Guppy /Derek Paul. Pat. App. No.29822/68'. The instrument was sold by Rex Guppy of Leigh-on-Sea, Essex, England, and was found in the vicinity of another apparatus from the same firm, a battery-powered opacity tester, which came in similar red card packaging.

Thomas Parker's Inch Weights

BY NORMAN BIGGS

The box of weights shown in Fig.1 is similar to two boxes illustrated in *Equilibrium* some twenty years ago (1986, p.956 and 1987, p.1017). The one shown here has the following inscription stamped on the top and underneath:

BRITISH GRAIN WEIGHTS
DECIMALIZED AND CORRELATED
ON THE INCH LENGTH.

UNIT = 250 GRAINS = 1 CUBIC
INCH OF WATER @ 122° FAH.
1/1000 UNIT = 1/4 GRAIN.

On one of the EQM boxes (p.1017) there is a similar inscription engraved on a brass plate, together with the name Thomas Parker.



Figure 1. Thomas Parker's inch weights.



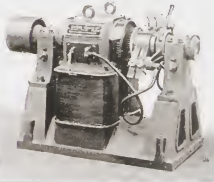
Figure 2. Thomas Parker

Until recently it was difficult to find out much about Thomas Parker (Fig.2), but fortunately a series of articles has now appeared¹ describing his important and varied achievements. In brief, he was the epitome of Victorian self-help. Born into a poor family on 22 December 1843, by the age of 10 he was working in the famous ironworks at Coalbrookdale. His ambition led him to take evening classes, and to move around gaining experience of the industrial world. He was in Birmingham in 1863, worked in the Potteries and in Manchester, and by 1868 he was back in Coalbrookdale as foreman of the works where he had worked as a child.

But that was only the beginning. He became an electrical engineer, designing one of the first battery accumulators, and then taking a major role in several of the earliest

electric tramway and railway systems. For this work he was awarded the Stephenson Gold Medal of the Institution of Civil Engineers. In 1882 he helped to set up an electrical engineering company in Wolverhampton, which produced electrically-powered cars, among many other things. His own company, Thomas Parker Ltd., produced dynamos and similar equipment (Fig.3). In 1908 Parker retired to Coalbrookdale, where he died in 1915. There is a memorial to him in Holy Trinity Church, Coalbrookdale.

TECHNICAL: JOHN WOLTERBARTON Photographed by: S.M.
THOMAS PARKER, LTD.,
WOLVERHAMPTON.



MANUFACTURERS OF
Dynos, Motors, Switchboards,
Continuous Current Transformers,
etc., etc.

See us and post particulars on application

Figure 3. Advertisement for Thomas Parker Ltd.

Thomas Parker's weights were intended to show how, in the imperial system, the unit of mass can be related to the unit of length. If the inch is a known quantity, then it is possible to define the grain so that 250 grains is the mass of a cubic inch of water at 122°F. Thomas Parker explained this idea in a letter to *The Times*, 6 May 1908. His letter was also printed in the *Journal of the British Weights and Measures Association*² for whom he wrote a pamphlet entitled *The Inch, the Metre, and the Metric System*. The boxes of British Grain Weights can therefore be confidently ascribed to him, and dated to around 1908.

The Weights and Measures Act of 1824 defined the inch and the grain in terms of actual objects, the Standard Yard and the Standard Troy Pound. The Act also provided (Section V) that if the pound were lost, it should be reconstructed by using the rule that one cubic inch of water weighs 252.458 grains, if weighed in air, with brass weights, at 62° F, the barometer being at thirty inches.

The Standard Pound was in fact destroyed in the fire at the Houses of Parliament in 1834, but by then serious doubt had been cast³ on the accuracy of the figure of 252.458. Consequently the new Standard Pound was constructed, not by the rule given in the Act of 1824, but by comparison with surviving copies of the original one. In 1889 it was thought desirable to give a new official value for mass of a cubic inch of water at 62° F, the value chosen then being 252.286 grains⁴. Curiously, in his letter to *The Times* in 1908, Parker gives a figure of 252.463 grains.

Whatever the figure should be, the principle is clear. Since water expands on heating, the mass of one cubic inch at higher temperatures is less than its value at 62° F. Parker claimed that his own experiments showed that at 122° F it is exactly 250 grains, and he pointed out that 122° F (=50° C) is exactly midway between the melting point of ice and the boiling point of water. That is the basis for the inch weights: elegant, but not entirely practical, since making measurements at 122° F is not easy.

Parker was interested in coinage, as well as weights and measures. In 1901 he distributed aluminium patterns for a decimal coinage, based on dividing the pound into one thousand parts (known as mils, approximately equal to a farthing) and declaring five of these parts to be a penny. More details can be found in C.W. Hill's article⁵. The example shown in Fig.4 is the 3 mil denomination. These decimal coins tell us that Parker was not a dyed-in-the-wool supporter of all things imperial. His inch weights were certainly approved by the British Weights and Measures Association, but his decimal coinage would have been more to the liking of their arch-enemies, the Decimal Association.



Figure 4. // Obverse and reverse of one of 'Tom Parker's Pennies'.

References:

1. Bev Parker. Thomas Parker, www.localhistory.scit.wlv.ac.uk/genealogy/Parker/ThomasParker.htm
2. *Journal of the British Weights and Measures Association*, July 1908, pp.14-15.
3. Airy, G.B. *Extracts of Papers [relating to] Restoration of the Standards*, 1841, p.6
4. Connor, R.D. *The Weights and Measures of England*, 1987, p.271.
5. Hill, C.W. 'Tom Parker's Pennies'. *Coin Monthly*, January 1979.

Irish City Standards, a conundrum

BY ANDREW CRAWFORTH

I was standing at James's stand at 7.15am, Saturday morning, on Portobello Road Market in London. There was nothing to look at, so I decided to move along. As I turned to leave, the man standing next to me said to James, *Will you take a cheque for the weights?* Weights. Suddenly I was interested.... There on the floor, where I hadn't looked, were three bronze bell weights of a shape I'd never seen before, stamped 'GATCHELL'. *Irish* Gatchell? The man, (another dealer), who'd looked more thoroughly than I had, took his well-deserved profit when I bought the weights from him five minutes later, and he very kindly delivered 49 lbs of weights to me.



Figure 1. The set of Irish bell weights with their distinctive collar round the waist.

I was thrilled that I had bought weights of a shape I'd never seen before, from a country I'd never seen bell-weights from, and by a maker whose weights I'd never seen. See Figure 1.

When I looked most closely, and peered through the dirt, various markings were visible. '...TY STAN...?' '...ITY STAND...?' 'CITY STANDARD'. See Figure 2. And some marks that were double-struck¹ but included a bell, crowned GR IV 1826 and a crowned GE³ IV 1826. That made me think about Belfast and a date between 1826 and 1830 (when King George IV died).

Now it was time to look at that excellent book by Ricketts and Douglas on weights and measures.² They referred to 7 bell-shaped standard weights verified at the Exchequer [Avoirdupois weights to be sent to Ireland] under an Indenture³ dated 24th July, 1824. But 'my' weights were not stamped at the Exchequer,



Figure 2. The stamps on the handle, showing how badly struck they were. Note the 7 has not got the denomination 'lb', as the use of the denomination only became mandatory after 1835. The stamp of 'CITY STANDARD' was struck separately from the stamp 'GATCHELL'.

British 1824 Act.⁴ Standards, that were supposedly introduced in 1705, may not have been made and sent to Ireland, and thus were unavailable for comparison.

If Irish makers wanted to make Avoirdupois weights which conformed to the Act of 1705, they probably had no standard of comparison until Standard weights were sent from London to Dublin in 31.8.1826. The Gatchell Standards are the earliest known examples of Standards made in Ireland under the Act of 1824.

'City Standard' is a phrase that has not been previously recorded. After the Act of 1824, trade weights in England were often marked IMPERIAL STANDARD, STANDARD or IMPERIAL, to imply that they conformed with the New Act, although the use of these terms did not indicate that the weights had been officially verified. Biggs states of English trade weights that the words *IMPERIAL* and *STANDARD*, often stamped in a curve, and Royal ciphers such as *G IV* or *GR* marks were, he suggests, ...impressed by the makers, rather than by the official examiners in the period 1826-1830.⁵

However, in Ireland, the term 'Imperial' had connotations that were unacceptable to many people, or could cause offence to some sections of the community.⁶ It is possible that the term 'City Standard' was used as a more acceptable term than 'Imperial Standard'. Alternatively, 'City Standard' meant that they were Standards issued under the Authority of the City of Dublin,⁷ where they were made, rather than 'Standard' referring to the Act of 1824, even though they do comply with that Act.

Gatchell probably sold these weights as Working Standards, being less authoritative than Exchequer Standards, but used to check weights and scales used for trade.

All three weights are stamped crowned 'GR IV' (see figure 4) and crowned 'GE² IV 1826' (see figure 5). This latter abbreviation of George has not been seen before. In England they usually stamped 'GR, 1826'. The use of 'GE²' may be an Irish variation. Note that 1826 does not refer to the date of manufacture, but to the date of the 1824 Act's being implemented. This reference to 1826 was superseded when the revised Act of 1834-5 was introduced. The mark theoretically changed to King William's mark when George IV died, although probably the delivery of new punches was delayed in some cases.

One of the most intriguing stamps on the weights is N over CD over crowned WR over JC. See figure 6. This stamp proves that the bell weights were used for trade, not as Working Standards, in Dublin, some time between 1830 and 1836. The N possibly represents the North Riding of Dublin.⁸ The CD represents either

were not bearing the official Exchequer mark, and were made in Ireland, so are not the set referred to, even though they are of the same period. See Figure 3.

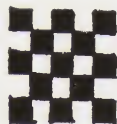


Figure 3. Exchequer stamp. This stamp was used until about 1866 on weights verified at the Exchequer in London.

Ricketts & Douglas also refer to a Parliamentary Act of 1705 to regulate weights used in Ireland, that decreed *the local magistrate would appoint weigh-masters to compare commercial weights with the Standards*. Contemporary records show *the extent of confusion and uncertainty which existed then*. They state that *'The Avoirdupois Standards ... were probably only later provided under the provisions of the*



Figure 4. ▲▲ Crowned GR over IV. George IV reigned from 1820 until 1830.



Figure 5. ▲▲ Crowned GIV over 1826.



Figure 6. ▲▲ N over CD over crown over WR over JC. The whole stamp is very small and each letter is minute and not well cut, hence the blurred effect.



Figure 7. ▲▲ The Bell stamp used in isolation.

County Dublin or City of Dublin. The crowned WR represents William Rex (King of Great Britain 1830-36.) The JC element is probably the initials of the Secretary to the Grand Jury who fulfilled the role of Inspector."

In Ireland the Grand Jury system was similar to that in England where, from at least 1266, *twelve lawful men shall swear to make true answer... if any do use false .. weights.*¹⁰

The weights were still in Dublin when William came to the throne, but at some period must have been moved to Belfast, and verified there with a bell stamp. See Figure 7. By 1834 the bell stamp was being used in Belfast in conjunction with crowned WR over 1834 according to Ricketts & Douglas, but on 'my' weights, the distinctive bell stamp is in isolation. *One of the improvements in the Act of 1834 was to replace Examiners with Inspectors of Weights & Measures. ... each Inspector was instructed to stamp the weights that he had verified with an individual mark, clearly identifying his local Authority.*¹¹ I deduce that the bell stamp was used alone prior to the 1834 mark's being adopted in Belfast. This Act of 1834 legitimised practices that were already in use.

Belfast was not a City in 1826, but a borough and only subsequently a City.

The most recent stamp is that of Edward VII. (1901-1914). The crowned 'E'R' stamp could be an Irish variation (as with GE IV). See Figure 8. In England the stamps were usually 'ER' during the reign of Edward VII. The 14 lb weight bears this stamp, crowned 'E'R', so presumably it was only this weight that needed to be adjusted and reverified.



Figure 8. ▲▲ The stamp of crowned E'R is difficult to distinguish amongst other stamps.

Gatchell's name is stamped on the top of all three weights, three times on the 28 lb and once each on the 14 lb (see figure 9) and 7 lb (see figure



Figure 9. ▲▲ The top of the handle of the 14lb bell weight showing not only Gatchell's stamp, but the bell stamps and the crowned 'GR 1826' stamps double struck.

Figure 10. ➤➤ Showing the seven stamps of 'GATCHELL'. Note the blow hole where the casting was slightly defective. The lead adjustment has been scraped, removing the verification mark that made it legal.

2). It is also stamped seven times under the 28 lb. See figure 10. If the 28 lb weight was the largest of the set, Gatchell may have stamped it underneath so that, if metal was removed from the underneath, it would immediately be apparent because of the removal of his stamps. (Falsification was easiest underneath because the surface remained bright, and consequently, any filing was less apparent.)

Prior to 1824, English bell weights were commonly made of bronze. See figure 11. The new Standards stamped at the Exchequer in London, which were sent to Ireland, were described as brass. In England, the Working Standards copied from this series, were usually made of brass. However, the Gatchell City Standards are made of bronze and so were perhaps old-fashioned or possibly intentionally different from the English Standards.

Samuel Gatchell was working in Dublin from 1791 to 1835, where he called himself *Beam & Scale Maker, and Iron-monger*. See figure 12. He was at 17, West New Row in 1791 as a hard-



Figure 11. ➤➤ The left-hand bell weight is classically English in design, and bears the stamp 18(ewer)26. It is made of bronze. The right-hand Irish bell weight is the 7 lb weight, also stamped for 1826. It is made of a more yellow brass. Due to lack of evidence, it is impossible to say whether this is a classically Irish design.

ware merchant. By 1794 he was working at 11 Abbey Street as an iron merchant, and by 1799 until 1835 he was at 87 Pill Lane as a beam and scalemaker, with other scalemakers as his neighbours. He is known to have made and retailed coin scales and weights.¹² The coin weights, for the guinea and then the sovereign (after 1816), were cast with S*G on the reverse. Because some coin weights were mules, with the obverse of James Pickering's die for a guinea weight, it is reasonable to assume that Pickering made the weights, being a weightmaker, and Gatchell made the scales. Samuel was the first of several generations of Gatchell scalemakers in Dublin, which was the centre of scalemaking in Ireland.

The distinctive silhouette of the Gatchell weights has not been seen elsewhere. Some of the marks are previously unrecorded. No other Irish Standards are known. So I felt I had a lucky find. The moral of this narrative is *Look everywhere, and especially on the floor!*

Notes & References:

1. Double-struck does not mean struck clearly twice, but means that the punch bounced when struck, so that two images overlap, making it difficult to interpret.
2. Ricketts & Douglas, C & J, *Marks & Marking of Weights & Measures of the British Isles*.
3. An Indenture was a document sent out by the Exchequer, with each set of Standards, to be held with each set, and returned for amendment when the Standards were returned to the Exchequer for re-verification.
4. The Act of 1824 [enacted 1826] covered Ireland because of the Union of Ireland and Britain in 1801.
5. Biggs N, *Antique Weights*, White House Publications, 1998.
6. Samuel Gatchell's own views are clearly indicated symbolically on his trade card, where Justice is shown with an Irish harp against her knee, rather than the usual Union shield. See figure 12.
7. City could only refer to Dublin in this context, as Belfast, where the weights were used at some point, was not a City at that time.
8. The larger counties of Ireland were divided into areas called Ridings, such as East and West or North and South.
9. Ricketts & Douglas write *In some places after 1835, the Secretary to the Grand Jury fulfilled the role of Inspector and this may have been happening prior to the Weights & Measures Acts, 1834 and 1835. It would have made sense to place these important responsibilities in the hands of the most senior official.*
10. Ricketts & Douglas, C & J, *Marks & Marking of Weights & Measures of the British Isles*, p 75.
11. Biggs N, *Antique Weights*, p. 24
12. Crawforth-Hitchins, D F, 'Irish Scalemakers/Retailers, Part 1', *Equilibrium*, pp. 1755-1769.

Acknowledgements:

With thanks to Dr. Charles Mollan, Prof. Norman Biggs and Diana Crawforth-Hitchins.

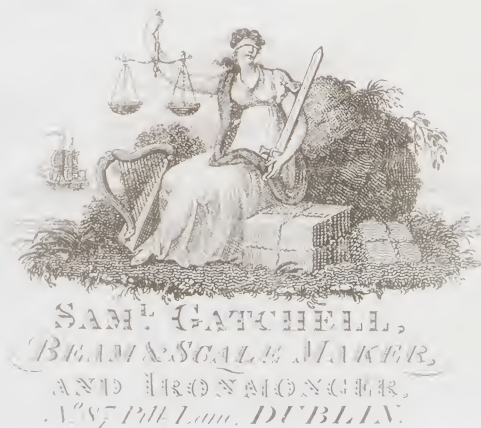


Figure 12. This trade card was found in a box of scales that doubled as a coin set and an apothecary set, used to mix medicines at home. It was altered and subsequently used by SAM'L GATCHELL & SONS until 1845, with the extra address of 9 Mountrath Street added.

Lloyd Scale

BY LES SCHNEIDERMAN

One of my most unusual scales is made primarily of wood. The scale is a steelyard beam and stands about 5 feet high. The scale has a balance beam, and suspended from the beam is one wooden goods plate.

The story begins with some of my travels far and wide to find my collection of scales. In addition to the USA, I have found scales in numerous foreign countries. Mention a scale sale almost anywhere, and I may be there.

Figure 1. ↗ The label on the scale below helped find the patent date and patentee.



The real story is how I found the scale. In my travels I always try to be as observant as possible. So, one day driving through a small town in Nebraska, where I live, I saw an interesting wood structure, holding plants, which was sitting on the front porch of a house. Stopping and knocking on the door, I inquired about the structure on the porch. The lady had no idea what it was, but she thought it made a good plant holder.

After some discussion and negotiation of a price, I managed to purchase the scale. The item peaked my interest, as the name on it was Lloyd's Scale, Minneapolis, Minnesota. I had previously only seen egg scales that were manufactured in Minnesota.

Back home in Omaha, after determining that indeed it was a scale, I was ready for the reconstruction project. The scale was not fancy and looked a little rough, even after I carefully tried to bring it back to life.

I enjoy finding scales that are in need of tender, loving restoration to bring them back to their original look - sometimes with a little added flair. The Lloyd scale needed some of this tender care. Now the scale looks almost like it probably did back in 1888 when the patent was granted.

Figure 2. ↘ One never knows where a rare or unusual scale might be found. This scale was discovered on a porch in a small town. Note the similarities of the real scale with the patent drawings below. Unlike some scales this one follows patent number 500337 almost exactly.

After restoration of the scale and some research, the following is some information on the scale and its history.

Annual Report Commission on Patents Alpha list of Patentees & Patents 1888

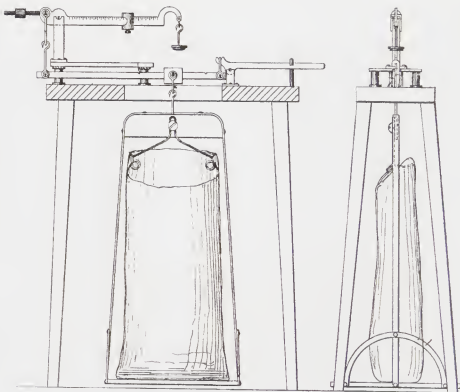
Page 189 Marshall B. Lloyd - Cavalier, Assinor of 1/4 to J. Coumee, Walsh County, Dak. Terr. Weighing Scale, Pat. No. 378,698, Feb. 28 (Walsh County is in what is now North Dakota near the Canadian Border).

Page 576 Scale Weighing, M. B. Lloyd, Pat. No. 378,698, Feb 28 Monthly Vol., Spec. 2021, Orig. 534

Official Gazette, Vol. 42, page 914

No listing in 1887 or 1889

Figure 3. // Lloyd's first patent number 378698 was issued on February 22, 1888. This early patent held the bag on a bifurcated metal holder while Lloyd's improved model shown below had two separate holders, with adjustable sleeves mounted on a vertically adjustable rod.



Minneapolis Business Directory

1887-88

Buffalo Scale Co. - Miller Brother & Fletcher, Agts, 119-121 S. 2d
Fairbanks Morse & Co. - 220 Nicollet Av
The Howe Scale Co.

1888-89

Buffalo Scale Co. - Miller Brother & Fletcher, Agts, 119-121 S. 2d
- See 54
Fairbanks Morse & Co. - 220 Nicollet Av
Howe Scales - E. G. Fisher, Mgr. 244 4th Av S
Lloyd Scale Co. - 315 Temple Court

1889-90

Fairbanks Morse & Co. - 220 Nicollet Av
Flour City Automatic Scale - (Lloyd's Patent, 213 S. 2d)

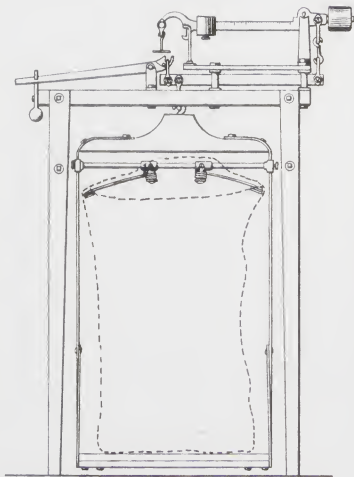


Figure 4. // Marshall Burns Lloyd was issued patent 500337 on June 27, 1893, for a Bag-Holding Weighing-Scale. In this patent drawing the dashed line indicates how the bag would be affixed to the bag holders on the scale. The Patent was assigned to the Lloyd Scale Co. of Minneapolis, Minnesota.

Marshall Burns Lloyd was born March 10, 1858 in St. Paul Minnesota. The son of John and Margaret (Connec) Lloyd. While Lloyd was still an infant his parents returned to Canada to live and settled on a farm at Meaford where Lloyd obtained a bit of an education and at the age of fourteen went to work in the village store. The next few years saw him selling fish door-to-door, moving alone to Toronto at age 16, selling soap and working in a grocery store. *At eighteen he became a rural mail-carrier on the sixty-five-mile route between Port Arthur and Pidgeon River, and while so engaged he joined the rush of settlers and real-estate speculators to Winnipeg. For a living he worked as a waiter, and by shrewd purchases of land with his meager savings he accumulated several thousand dollars within a few*

months. With this fund he went to North Dakota, bought a farm at Grafton, and brought to it his parents and brothers and sisters. He soon discovered that he did not like farming and went alone again to St. Thomas, North Dakota, where he engaged in the insurance business¹. While there he invented a combination scale and bag holder to be used in filling grain sacks. The device enabled one man to do the work formerly requiring two men. Mr. Lloyd began the manufacture of this invention at St. Thomas, but was so unfortunate as to lose his factory and equipment by fire².

Lloyd moved his Company to Menominee, Michigan in 1905. In 1921 Lloyd Manufacturing Co. was merged with the Heywood-Wakefield Co. of Boston³. At the time of his death in Menominee on August 10, 1927, Lloyd held at least 200 patents and had a net worth of over two-million dollars. In addition Lloyd was mayor of Menominee during 1913-17...was president of the Lumbermen's National bank, president of the Community Building Company, president and sole owner of the Lloyd Department Store and Lloyd Theater, director of the Heywood-Wakefield Company, vice president of the Automatic Seamless Tubing Company and director of the Hoskin-Morainville Paper Company, besides holding stock in other banks and manufacturing enterprises.³ While his most profitable inventions were for weaving bed springs and wicker, he held four patents for grain bagging scales. They are as follows: 378,698 (1888), 430,867 (1890), 493,275 (1893), and 500,337 (1893).

Notes & References:

1. Mitman, Carl W. "Marshall Burns Lloyd." *Dictionary of American Biography*. Vol. 6. Ed. Dumas Malone. New York: Charles Scribner's Sons, 1933: 333-32.
2. *The Herald-Leader* Menominee, Michigan, August 10, 1927, P10:1.
3. *The National Cyclopaedia of American Biography*. Vol. 25. P. 121.
4. For more information on the life of Marshall Burns Lloyd visit <http://www.mlloyd.org/gen/lloyd/text/mbllloyd.htm>
5. The author wishes to thank Steve Beare, Jan Berning, Bob Jibben and Marshall Davies Lloyd for their contributions to this article.

Author's Biography:

Les Schneiderman graduated from Creighton University in Omaha, Nebraska and then joined the Army infantry as a Second Lieutenant. During his tenure with the military he spent a year in Japan.

After his military discharge he went into the food service industry where he worked for 45 years. Les and his wife, Jan have been married for 50 years and have 3 children and 7 grandchildren. Les has a large scale collection and has been a member of ISASC for 12 years. He also collects coffee mills, pencil sharpeners, apple peelers and typewriters which he has displayed in a private museum.



Figure 5. ▲ ▲ Beam detail of Lloyd's bagging scale.

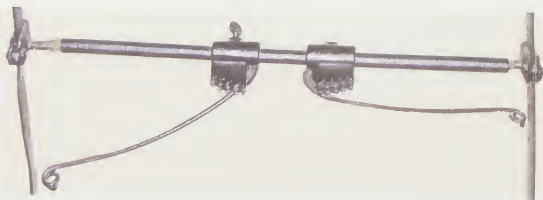


Figure 6. ▲ ▲ Detail of the bag holder on Lloyd's scale. In his patent Lloyd wrote *these spring arms together with the serrated surfaces of the sleeves are adapted to engage and hold a bag as indicated in dotted lines...and the cross rod may be moved to any desired position so as to engage a bag of any desired height and the sleeves may be adjusted upon the rod to accommodate the width of the bag.*

Showcase of Scale Jewelry



Figure 1. // This solid silver oval Avery tie pin measures 1" x 1/4", is Hall marked 1935 and made by Vaughton & Sons Birmingham. Perhaps it was an award for salesman of the month or year for the Liverpool Area. At the time there were -Glasgow, Edinburgh, Newcastle, Leeds, Manchester, Belfast, Dublin/Cork, Liverpool, Birmingham, Reading, Cambridge, London, Southampton, Bristol and Cardiff Area Offices.

Courtesy David Matthews

Figure 5. // Watch fob issued by the Massachusetts Association of Sealers of Weights and Measures in Boston in 1916. It measures 5 1/2" long x 1/8" wide at top.



Figure 6. // These two tie pins are 1960s vintage for Berkel & Bizerba.

Courtesy David Matthews



Figure 2. // Toledo Scale Co. gave these service pins to their employees. The 5, 10 & 15 year pins are marked gold filled while the 25 year pin is marked sterling. Each measures 1/2" in diameter.



Figure 3. // Tie pins featuring a Toledo barrel top computing scale. The oval measures 1/16" by 1/4" and the pin is 2 1/8" long. The reverse of the brass pin at right reads *Toledo Computing Scale Company Makers of Honest Scales*.



Figure 4. // Fairbanks Morse 25 year service tie tack marked oTo 10K features the hand-held weight, blue enamel and a full cut diamond. It measures 1 1/2" diameter.



Figure 7. // Set of sterling cuff-links and tie clasp featuring the Toledo Scale logo and the number 400. The cuff-links measure 1/4" diameter and tie clasp measures 1 1/4" long.



Figure 8. // Early Toledo Scale Co. service pins measuring 1/2" in diameter. 5 & 10 year pins are marked gold filled while the 15 year is marked sterling.



A Balanced View

Welcome to summer although it hasn't been too warm here. However, the weather has been ideal for working on my scale museum here at the lake. I need to get it finished prior to a visit from Steve and Karen Beare as they swing by here on their way to the regional scale meeting in Michigan. It is nice to get my scales out of the boxes they have been in since we moved a year ago January. It just reinforces for me that there is no use in having a collection unless you can get them out and displayed so you can play with them.

Regional Meetings

Michigan Get-Together, August 22, 2009, at the home of Greg Moss
2194 Ostrum Drive, Waterford, MI 48328 gmoss24@comcast.net

Midwest Collectors Weigh-In, August 29, 2009, at the home of Bob Jibben
1821 West 49th Street, Minneapolis, MN 55419 rmjibben@hotmail.com

Pennsylvania Regional Meeting, October 3, 2009, at the home of Jerry Katz
4305 Wheelwright Trail, Downingtown, PA 19335 jeromekatz@aol.com

Don't miss this chance to visit with scale collectors in your area.

The ISASC Collection

Mary Anne Murphy reported at the Kansas City Convention that the ISASC Collection had received several generous gifts over the past year.

1. Chuck Lamlein, who began gifting his collection to ISASC in 2007, has given us several more groups from his collection. We have now received egg scales, household scales, boxed scales, spring balances, shop scales, baby scales (along with an adorable baby doll), postal scales, steelyards and farm scales. Thanks go out to Chuck and Helen Lamlein, Kurt and Anne Beyreis and Les Firth for transporting the scales to Pittsburg.

2. We have also received the scale and weight collection of Betty Barth. Kurt and Ann Beyreis went to Betty's New York apartment and spent many pleasant hours with Betty packing up her collection, which they then drove to Pittsburgh.

3. George Korach, from Lackawanna, NY, gifted us about 40 scales from his collection in memory of his mother and father, Steven & Mary. Les Firth and his brother drove to George's house and packed up the scales, which Les and Elaine later drove to Pittsburgh.

4. At the convention, responding to our comment that we had only two grain scales in the collection, Bob Foster generously purchased a grain scale at "Let's Make a Deal" and gifted it to the ISASC Collection.

5. Since the report presented in Kansas City, Mary Anne Murphy reports that the ISASC Collection is the grateful recipient of the Aaron H. Traum scale collection. Aaron, a long time member of ISASC, is over 100 years old. He is presently in a nursing home, where he is seen in the attached photo admiring some of his scales. Aaron's family donated their dad's collection of over 700 items to the ISASC Collection. Aaron's son Arthur, who lives in California, flew to Silver Springs, Maryland, and with the help of some ISASC members packed the collection, rented a truck and drove the collection to Pittsburgh. The scales were then catalogued, photographed and displayed and now make a nice addition to our collection. We are very appreciative of Aaron and the Traum family for this most generous gift. We are also indebted to Jerry Katz, Kurt and Anne Beyreis, Les Firth and his grandchildren, James Reeve and of course Mary Anne Murphy for their help in getting the Traum collection nicely situated in Pittsburgh.



We sincerely want to thank all those who have entrusted us with their scale collections.

The ISASC Collection has come a long way since it's beginning as is evident in these pictures comparing it in 2007 to 2009. This latest picture was taken prior to receiving the Traum collection in June.



Kurt and Ann Beyreis have been busy photographing and inventorying the collection and entering the items into a computer based program.

We are now at the point where we have quite a few duplicates, so we will begin to sell some of the duplicates to help support the maintenance of the collection.

Many people have been involved in bringing our collection to where it is today. Thanks go out to the following for their assistance and support: Kurt and Anne Beyreis, Les and Elaine Firth, Jerry and Mary Katz, James Reeve, various members of the Firth extended family, and of course their leader Mary Anne Murphy. Good job everyone!

Publicity Committee

Shirley Schmidt began her term as a director of ISASC on June 1st and has undertaken the responsibility of membership chair. Attracting new members is an integral part of this position. In order to find more ways of identifying new members, Shirley is establishing a Publicity Committee and is seeking assistance from the membership. Shirley is anxious to get her committee established as soon as possible. Please contact her at your earliest convenience if you are willing and wish to join this committee.

Equilibrium

Equilibrium is one of the cornerstones that sets us apart as the foremost authority on the topic of scales and metrology. It is so because our members routinely write interesting and knowledgeable articles about scales and other items in their collections. EQM Editor Jan Berning has advised that she needs more articles on US scales and has asked me to solicit your help. We all have a special item in our collections that we can share with other collectors. Jan and her support group is more than willing to help in crafting an article. Jan can be contacted at jhberning@comcast.net and she would be delighted to hear from you.

Website Updates

Carol Hayden advises that the website has been updated to include the following: 1. The International News section was updated by Utz Schmidt in July with new material covering January through June. 2. A recap of the convention in Kansas City has been posted to the website. Please take a few moments to check these out.

Collection Insurance

Insurance for our collections can sometimes be a problem. It may be hard to find an appropriate carrier or it may be too expensive. Shirley Schmidt has recently been in touch with the Association of Collectors Club who report that they are working with the Association of Insurance Administrators to establish economical insurance for various types of collections. Shirley will continue to follow up with both of these organizations and will keep us posted of any significant progress.

Upcoming Auction

We have received the following notice of an upcoming auction from Stuart Malter that may be of interest to some of you.

My Cousin Michael Malter and I through Malter Galleries of Encino California www.maltergalleries.com will be having a Scales, Weights & Scientific Instrument Auction October 25th 2009. We have acquired a nice collection of scales & weights 17th – 20th Century and a small collection of Scientific Instruments to include Microscopes, Sundials and Compasses from a museum, mostly 18th and 19th century. We will also be accepting a limited number of additional scales and weights if anyone would like to consign them. They can contact me by email at smalter@aol.com or 704-376-2883. I realize the auction won't be until the fall but we want to give individuals until the 20th of August to contact us.

Welcome To New Members

I would like to take this opportunity to welcome the following new members and to encourage them to contact any of the members of ISASC should they have any questions.

Michael Foster & Margaret Granville
Rubin & Emily Boyajian
Michael & Vicki McLaughlin
Greg & Lesley Laycock
Bob Wittenberger
Paul Benson

Manotick, ON, Canada
Effingham, IL
Manassas, VA
Dublin, OH
Jamestown, MO
Kansas City, MO

Change in Membership Status

At the board meeting in May the matter of membership status was raised resulting in a change that I hope all will find agreeable. In the past membership in ISASC was restricted to only individuals such that if a member and their spouse were both collectors of scales each would be required to become a member and pay the annual dues. We have now changed the membership status so that members and their spouses will both be considered members and will be covered by one annual dues assessment. You may have noticed in the 2009 Directory that both names are listed as members. Please check your directory listing for accuracy.

Membership Directories

In a continuing effort to recover old files of ISASC we are looking for Membership Directories from the years 1985, 1986 and 1987. We would appreciate anyone that has these directories to let us know. We sincerely appreciate Steve Beare who donated directories from 1989 to 2005.

Correction

In the last newsletter I indicated that ISASC member Jack Young had sold Toledo scales during his career. Jack was in the scale business for his entire working life. His interest in scales came as a youngster when he would work with his dad who was also in the scale business servicing the needs of tobacco farmers in the Carolinas in the 1930s and 1940s. Jack established his own business, The Young Scale Company, originally in North Carolina and later he moved it to Honolulu, Hawaii, where he operated for twenty-three years. He sold the business a number of years ago and it is still actively selling and servicing scales. However, even today, the Young Scale Company has never sold a Toledo scale. The Toledo scale I featured in the last newsletter is one of several that Jack has in his collection.

In Memorium

I am saddened to relate the death of fellow ISASC member Charles Cox of Seattle, Washington. Charles had been a member of ISASC since 2000. He is survived by his wife Barbara.

Scales for Sale

Jerry Neufeld has two scales for sale that some members may be interested in. They are as pictured below: an Angldile Scale at a price of \$2,200 and an Independence Vertical Barrel Scale at a price of \$3,000. If you have an interest or if you wish to see additional pictures you can reach Jerry at jneufeld2@comcast.net



I hope this letter finds you all well and that you continue to be on the lookout for that next special addition to your collections. We look forward to seeing see some at the Michigan regional meeting. Bye for now.

Peter Laycock

Peter Laycock,
President ISASC

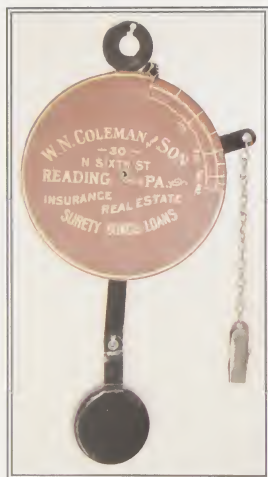


EQUILIBRIUM

QUARTERLY MAGAZINE OF THE INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

2009 ISSUE NO. 4

PAGES 3517 - 3544



Cover Picture

These little pendulum postal scales were manufactured primarily as a give-away, advertising medium from 1899 to 1902. Each measures just over six inches and has a face diameter of $2\frac{1}{8}$ inches. The pendulum poises on these letter scales are made of lead.

The scale on the left has a leather face affixed to its tin or steel disk face. Others are either lithographed or have a paper covered advertising face. The center scale can be used as a calendar as it has a special dial hand to mark the day and month of the year.

To learn more about these interesting US postal scales and their inventors read the article by Peter Laycock on pages 3519-3523 in this issue of EQM.

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Article submissions are preferred in MS Word with Times New Roman Font size 12.
Photos are best in 300 DPI Jpegs in a separate file with a maximum of 3 photos per Email.

The Matchless Letter Scale

BY PETER LAYCOCK



Figure 1. ◀ ◀

A number of years ago I was fortunate enough to come across a remarkable little pendulum scale called “The Matchless Letter Scale” (figure 1). It was a simple little device made from sheet metal and attractively decorated with a picture of a postman of the period. It has a very interesting pivoting poise (figure 1a) which unlike most pendulum scales allows the poise to remain perpendicular as a load is attached to the clip which is held by a chain on a clever pivoting arm. The net effect is that the scale remains in a vertical position when it is hung on a hook. The pendulum poise is decorated with a letter box that reads “U.S. Mail” providing a clue that this is an American scale. There is no reference of the maker but it indicates that a patent had been applied for (figure 1b).

Several years later I found a small cardboard advertising card with a picture very similar to my scale. On the front it describes the scale as “The Advertising Letter Scale” (figure 2). It also depicts a method for its use. The scale is hung on a hook that extends from the wall by several inches. On the back of the card are the rates of postage for both Domestic and Foreign Mail (figure 3).

The card is also hung on the hook through a small metal eyelet providing easy reference to the postal rates (figure 4). I found it interesting that at that time the US Postal Service would only mail to “civilized” destinations as specified in the following excerpt that appears in small print; *From the United States to all “civilized” places and countries throughout the world.*

This card did however provide me with important clues which enabled me to learn more about this scale. On the front of the card there is an illustration of an envelope held by the scale’s clip. Written on the envelope is “Wm. Eschemann & Co., Manufacturers, Philada. Pa. U.S.A.”



Figure 1b. ◀ ◀

As it turns out, this fellow, Wm. Eschemann is an interesting character who, throughout his career, tried his hand at many things. He emigrated from Germany in 1869 at the age of 15 accompanied by his parents and siblings and settled in Baltimore, Maryland.



Figure 1a. ◀ ◀

The Advertising Letter Scale.



WHEN ALL MUST HAVE - - - - - UPON THE HOUR WHICH IS
FINISHED WITH - - - - - NEAR TO THAT IT ALL REMAIN
FIRM AND STEADY - - - - - CLEAR OF THE WALL AS ABOVE
HOLD IT FIRM.

Figure 2. ^^

Figure 3. ^^

He was granted a US passport in February of 1890. The application states *William Eschemann, born Braunschweig, Germany August 18, 1854, emigrated from Bremen to Baltimore on S. S. Ohio, arrived Sept 30 1869, resided in Philadelphia 1869 to 1890. Naturalized in Philadelphia Oct 2, 1879, occupation Salesman.*

RATES OF POSTAGE

DOMESTIC.

LETTERS	-	Per 1 oz.	2 cts.
LETTERS Registered	-	per 1 oz.	10 cts.
LETTERS Special Delivery	-	Per 1 oz.	13 cts.
SECOND-CLASS	-	Per 4 oz.	1 cent.
THIRD-CLASS	-	Per 2 oz.	1 cent.
FOURTH-CLASS	-	Per 1 oz.	1 cent.

FOREIGN.

LETTERS	-	Per 1-2 oz.	5 cts.
POSTAL CARDS	-	-	3 cts.
POSTAL CARDS with Reply Stub	-	-	4 cts.
Photographs	-	Per 2 oz.	1 cent.
Newspapers	-	Per 1 lb.	1 cent.

In 1893 he traveled abroad spending some of that time in Great Britain; he returned to the USA in 1897. While in Great Britain he applied for and was granted two US Patents both for autoharps. This is the first indication I could find that indicated that among other things he was somewhat of an entrepreneur and inventor.

Upon his return to the United States he developed an "Indicator Lever for Letter Scales" (figure 5). A US design patent 31582 was filed on March 13, 1899 and the patent was issued on October 3, 1899 to William Eschemann, Philadelphia with 1/3 assigned to George W. Koch, Philadelphia.

Subsequent to that he developed a "Letter Scale" (figures 6&7) and a second patent, US patent 668349, was filed March 13, 1899 and issued February 19, 1901 to William Eschemann, Philadelphia with 1/3 assigned to George W. Koch, Philadelphia. Note that the patented indicator lever of the earlier patent is an integral part of this letter scale. These are the two patents that were filed for "The Matchless Letter Scale".

A search of the annual directories of Philadelphia from 1869 to 1930 shows that William Eschemann was somewhat nomadic. During that time he tended to move, often listed as a boarder and he resided at as many as ten different addresses in

Figure 4. ^^



Philadelphia. He was also listed as having many different vocations; wood-worker, salesman, music teacher, bookkeeper, agent for mineral waters, commercial traveler, machinery marketer and confectioner. His varied vocational background would suggest that he was probably a "hobby inventor" who may have had a penchant for interesting ideas. I suspect that this letter scale is the result of this characteristic.

George Koch, ten years younger than Eschemann, to whom $\frac{1}{3}$ of both patents were assigned, also resided in Philadelphia. He was listed as having been engaged as a blacksmith, moulder, machinist, confectioner, traveling salesman, machinery manufacturer and a *scale maker* (1900).

The common thread between the two is that both were confectioners in the period 1892 and 1893. Possibly Eschemann and Koch worked together during this period. From 1885 to 1892 Koch was listed as being either a moulder or a machinist. This background would have been an asset in the manufacture of these letter scales. My assumption is that Eschemann conceptualized the letter scale and then engaged Koch to help to craft the original scale.

Because of their checkered backgrounds, I suspect that neither had the facilities to manufacture these scales. As well the quality of the machining and the sophisticated and detailed nature of the decoration would suggest that they had farmed out the actual manufacturing of their scales to a local metal fabricator.

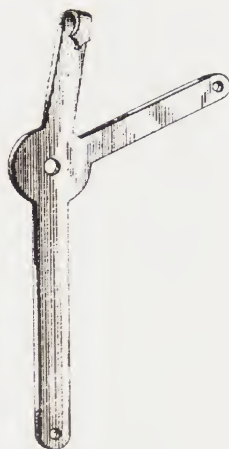
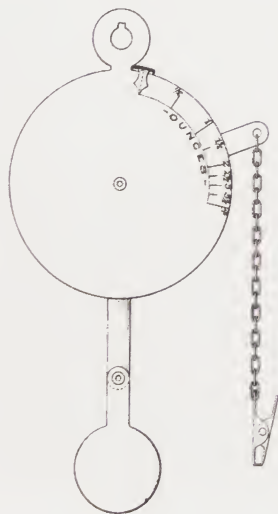


Figure 5. *▲ ▲*

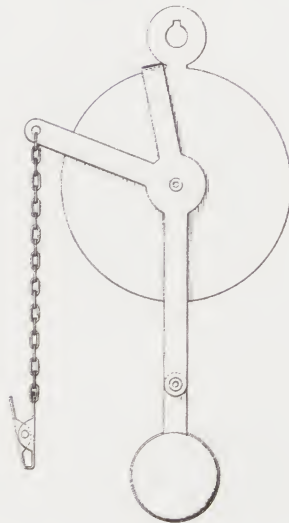
Fig. 1.



Eschemann may indeed be a pioneer in a marketing sense. He saw an opportunity to develop a secondary and complimentary use for what was a small common device that could be used on a daily basis at one's desk. I am not aware of any other scale that was used as an advertising vehicle prior to 1899.

One of the principle ideas that motivated Eschemann to manufacture these scales was to provide an easy to use inexpensive advertising vehicle. In the patent description is the following: *The object of my invention is to provide a letter-scale which is operative without the use of springs and is of such a simple character that it can*

Fig. 2.



Figures 6 & 7 *▲ ▲*



Figure 8. //

be made cheaply enough to be available for use as an advertising medium for gratuitous distribution.

Several examples have been found; typically the face is covered with fine leather upon which the advertisement is applied. In the Jerry Katz collection there is an example from Reading, PA, advertising *W. N. Coleman and Son, 30 N. Sixth St, Reading, PA, Insurance, Real Estate, Surety Bonds, Loans* (figure 8). In the Peter Laycock collection is an example of a scale advertising a liquor merchant with the following advertisement "Compliments of Kelly Bros. Wilmington, Del" (figure 9). The application of the leather, the cutting of the stamping dies and the foil stamping process again were probably skills that Eschemann



Figure 9. //

and Koch would not have, thus supporting the notion that they engaged others to manufacture their scales.

Additionally a very attractive Postal Scale and Calendar was introduced and offered for sale for the year 1900. The letters were weighed as in previous models, but a calendar was incorporated where one could set the date by moving hands, as on a clock, to indicate the month and the date. A very fine example is in the Betty Wright Collection (figure 10).



Figure 10. //



Figure 10a. // The calendar scales have the patent dates of October 3rd, 1899 and February 19th, 1901 shown on the top holder.

An advertisement for this scale was placed in the Philadelphia Inquirer December 14, 1899 and read as follows: *The NEW COMBINATION letter scale and calendar for 1900 will be sent to any address for 25c in stamp. W Eschemann & Co. Mfgs, 109 South Third Street.*

It is anyone's guess as to how many years the calendar scale was made available. The two examples I have seen both reference that patent issue date of February 19, 1901 which would indicate that they were available at least up to 1902.

For the year 1900 George Koch is listed in the Philadelphia directories as a *scale maker* and in 1901 as a *salesman*. William Eschemann in 1902 was listed as a *salesman of novelties*. This would support the idea that they had moved from manufacturing and now were engaged in sales and marketing. In 1904 Koch was listed once again as a machinist. Eschemann continued to be listed as a salesman until 1907; after that it appears as though his primary vocation was that of an agent for Witter Medical Spring Water. These changes in their vocations would suggest that their efforts at manufacturing, marketing and selling postal scales were relatively short lived, perhaps only five years. It would appear as though this was a "two man band" and as such there may not have been sufficient financial resources to expand their business.

It should be mentioned that similar scales were produced in Great Britain, in an earlier time frame (figure 11). The patented lever appears to be very similar. It also has a round decorated face plate. The letter clip however is quite different. These scales also were used as an advertising vehicle. It may be that Eschemann, while in England from 1894 to 1897, saw these small advertising scales and decided to introduce the concept to America. Who knows!

As stated The Eschemann & Co. Manufacturing business may have survived for only a few years. The rarity of these scales does suggest that it was short lived. The latest record for William Eschemann was in 1930, age 75, living in Upper Darby, PA, *no occupation* (this means retired). There is a reference to his wife Kate on a passenger list to California in 1933 where she is referenced as a widow. The latest reference for George Koch is in 1930 where he is listed as retired at the age of 63.

And so it goes. I am delighted to have this wonderful little postal scale which I bought several years ago. Thanks to my wife Dian, for without her guidance, it would still be in the dealer's kitchen. You see, as many of us do, when this fellow suggested the selling price I went into my negotiation mode trying to get a better price. Dian tapped me on the shoulder and said "Don't be silly, you may never see another one and the price seems fair to me." She was right and now this scale has found a happy home.

Notes:

1. I would like to thank Steve Beare for his assistance in providing a ton of research on patents, Eschemann and Koch. Also thanks to Betty Wright and Jerry Katz for pictures of their scales that appear in this article.
2. Reprinted from EQM 1986 issue No. 4, Page 958.



Figure 11. ▲▲

Patent Warranted Correct and John Crane, Brass Founder

BY MICHAEL FOSTER

John Crane, Brass founder, was making sovereign rockers at his 'Crane and Spooner' foundry at 26 Cannon St., Birmingham about 1828 and is responsible for the unusual 'Patent Warranted Correct' series of sovereign rockers.

This statement is based on my study of the Crane Crown found on 'C&S' rockers and the rockers made by partners with Crane'. The dates quoted are supported by documented references to the named owners or company, at the location, in the year indicated, and derived from Birmingham and Warwickshire Directories. I have used 'c.' [circa] when the date is within five years of a particular date and 'about' when I have worked from other information.

The fact that links John Crane, Brass founder, to the 'Patent Warranted Correct' sovereign rocker series is the Crane crown stamp, Drawing 8, found on the poise of a 'C&S', Crane and Spooner, labelled rocker. The 'PATENT' stamp on the poise and 'WARRANTED CORRECT' stamp on the sovereign platter make the rocker one of the series that we now know was made by John Crane and his partners at the 26 Cannon St. foundry.



Fig. 1. Drawing 8 of Crane Crown found on the poise of a C&S labelled rocker.



Figure 2. Crane Crown on a rocker with 'PATENT C&S' on poise, 'WARRANTED CORRECT' on platter.



Figure 3. Crane Crown on a rocker with 'PATENT' on poise, 'WARRANTED CORRECT' on platter.



Figure 4. Crane Crown on a rocker with 'PATENT WARRANTED CORRECT' on poise.



Figure 5. Crane Crown on a rocker with 'WARRANTED CORRECT' on poise.

The original Crane & Spooner, 'C&S' rocker with 'WARRANTED CORRECT' on the platter:



Figure 6a & 6b. / / 'PATENT C&S' on poise, 'WARRANTED CORRECT' on platter.



The series of 'Patent Warranted Correct' rockers with the Crane crown but otherwise unnamed, include an interesting variety of rocker styles:



Figure 7a & 7b. / / 'PATENT' on poise, 'WARRANTED CORRECT' on platter.





Figure 8a & 8b. / / 'PATENT' on poise, 'WARRANTED CORRECT' on platter.



Figure 9a & 9b. / / 'PATENT WARRANTED CORRECT' on poise.

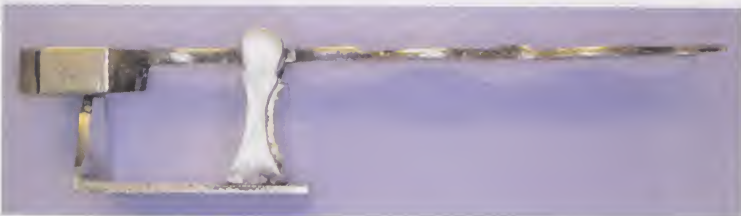




Figure 10a & 10b. ↗ 'PATENT' on poise, no 'WARRANTED CORRECT'.



Figure 11a & 11b. ↗ 'WARRANTED CORRECT' on poise, no 'PATENT'



The use of "Patent" on sovereign rockers is presumed to have been a marketing ploy as no British patent was granted for sovereign rockers.

A brief summary of John Crane's history in Birmingham:

In 1818, John Crane was operating with a junior partner, William Fletcher, in the Crane and Fletcher foundry on Cannon St., Birmingham.

By 1828, the junior partner was William Spooner, in the 'C&S'. Crane and Spooner, foundry at 26 Cannon St., Birmingham and William Fletcher was with Fletcher and Day.

By 1835, John Crane had a yet another junior partner, Edward Pattison, in the Crane and Pattison foundry at 26 Cannon St., Birmingham. William Spooner had died in December of 1829.

By 1842, Crane's junior partner was Edward Bach, in the Crane and Bach foundry at 26 Cannon St., and Edward Pattison was off on his own.

In 1849 and 1850, John Crane is listed as the sole owner of the Cannon St. foundry and by 1852 he was retired to his Lee Crescent home. John Crane died in 1857.

A summary of Research and Time-line from Birmingham Directories for John Crane and the 26 Cannon St. foundry:

Crane and Fletcher

- 1818 Crane and Fletcher, brass founders, Cannon St, Birmingham, Reference: *Wrightson's New Triennial Directory of Birmingham*, 1818, p.34 and p.154 under Brass Founders.
- 1826 William Fletcher, brass founder, on his own 15 July 1826, when he was listed as a beneficiary of the indenture of William Hughes, a factor in Birmingham. Reference: *London Gazette*, 15 August 1826, p.2023.
- 1828 Fletcher and Day, (William Fletcher) brass founders, 31 Loveday St, Birmingham, Reference: *Pigot and Co.'s National Commercial Directory for 1828-9 [Part 2: Notts - Yorks & N Wales]*, p.784 under Brass Founders.

Crane and Spooner

- 1828 Crane and Spooner, brass founders, 26 Cannon St, Birmingham, Reference: *Pigot and Co.'s National Commercial Directory for 1828-9 [Part 2: Notts - Yorks & N Wales]*, p.770 and p.784 under Brass Founders.
- 1829 Partnership between John Crane and William Spooner was dissolved 30 December 1829, by the death of William Spooner. Reference: *London Gazette*, 14 September 1830, p.1957.
- 1830 Crane and Spooner, brass founders, 26 Cannon St, Birmingham, Reference: *The History, Topography and Directory of Warwickshire*, by Wm. West, 1830, p.324, p.415 under Brass Founders.

Crane and Pattison

- 1835 Crane and Pattison, brass founders, 26 Cannon St, Birmingham, Reference: *Pigot and Co.'s National Commercial Directory for 1835*, p.535 under Brass Founders.
- 1839 Crane and Pattison, brass founders, 26 Cannon St, Birmingham, Reference: *Robson's Birmingham and Sheffield Directory*, 1839, p.412 under Brass Founders.
- 1840 Partnership between John Crane and Edward Pattison was dissolved 4 January 1840 by mutual consent. Reference: *London Gazette*, 14 January 1840, p.89.

- 1842 Edward Pattison, brass founder, 7 Unett St, Birmingham, and William Fletcher, brass founder, 31 Loveday St., Birmingham. Reference: *Pigot and Co.'s Royal National and Commercial Directory and Topography, July 1842*, p.79 under Brass Founders.

Crane and Bach

- 1842 Crane and Bach, brass founders, 26 Cannon St, Birmingham. Reference: *Pigot and Co.'s Royal National and Commercial Directory and Topography, July 1842*, p.25 and p.79 under Brass Founders.
- 1847 Crane and Bach, brass founders, 26 Cannon St, Birmingham. Reference: *Slater's Classified Directories 1847*, p.5 under Brass Founders.
- 1848 Partnership between John Crane and Edward Bach, junr. was dissolved 29 August 1848 by mutual consent. Reference: *London Gazette*, 1 September 1848, p.3248.

John Crane

- 1849 Crane, John, brass founders, 26 Cannon St, (Home: 13 Lee Crescent) Birmingham. Reference: *History and General Directory of the Borough of Birmingham*, by Francis White and Co., 1849, p.136 and p.313 under Brass Founders – Crane was by himself with no partners listed.
- 1850 Crane, John, brass founder, 26 Cannon St, Birmingham. Reference: *History, Gazetteer and Directory of Warwickshire*, by Francis White and Co., 1850, p.313 under Brass Founders.
- 1852 Retired listed as Mr. John Crane at 13 Lee Crescent, Birmingham. Reference: *Slater's General and Classified Directory of Birmingham*, for 1852-3.
- 1857 John Crane of Birmingham, Gentleman, died on or about September 1857. Reference: *London Gazette*, 15 January 1861, p.180.

There are currently no examples of a 'Crane' stamped/named sovereign rocker on record. This information shows that except for the use of 'C&S' on the poise of one rocker style, the only maker identification on the 'Patent Warranted Correct' series of rockers is the Crane crown found on the poise of all of the rockers.

I believe that we can conclude from this information that John Crane and his partners made the 'Patent Warranted Correct' series of sovereign rockers at the 26 Cannon St. foundry over a period of up to 32 years, from about 1818 to 1850, with the Crane crown on the poise as maker identification.

From this information a collector, antique dealer, curator or historian should be able to identify and categorize sovereign rockers made by Crane.

Acknowledgements

Special thanks to Diana Crawforth-Hitchins for her assistance and patience with the author.

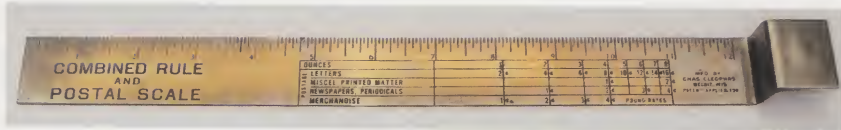
Notes & References

- Reference my forthcoming Book: *Sovereign Balances 2 – Standard Rockers and Crowns*.

Showcase

Charles Cleophas of Beloit, Wisconsin was issued Patent number 1,126,398 on January 26, 1915, for this Combined Ruler and Postal Scale which uses a pencil as its fulcrum.

Peter Laycock collection.



Three Transparent Scales

BY REIN KOK



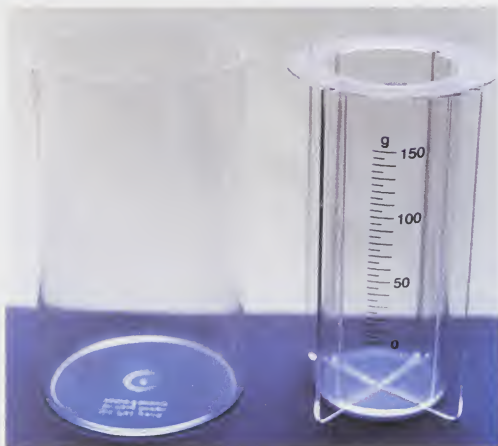
Figure 1. / /

Figure 3. / /

At the end of the last century (about 1993) a Dutch designer made a hydrostatic balance of pyrex glass and water. His name is Arnout Visser. It's a very simple design: two tubes of glass, one open at one end and one closed at both ends. (figure 1) The open tube (left) has to be filled with water to the three dimples. Then you put the second tube upside down in the tube with water and...your balance is ready!! The second tube sinks to the indication "grs." The water can be coloured with a felt-tip-pen (figure 2). This is of no influence in weighing. The outer tube is 20 cm tall and 5 cm in diameter.



Figure 2. / /



The second hydrostatic balance is of Dr. Haag (Germany) (figure 3). It's the same principle as the first scale. The two tubes are made of plastic. It has a capacity up to 150 grams. The outer tube has a diameter of 78 mm and is 130 mm tall. The inner tube is 47 mm in diameter and has an open top.(figure 4) To weigh you have to fill the outer tube to half. This design is from about 1985.

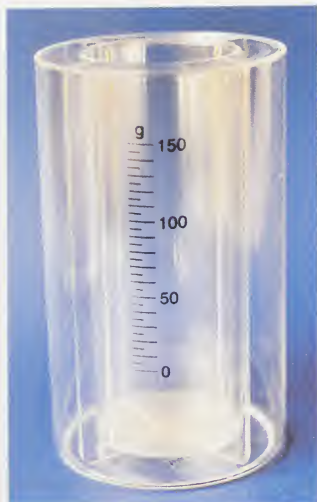


Figure 4.

Figure 5.



The third scale is a pendulum one (figure 5). It's made of acrylic, except both stands and the adjustment screw. These are of a silver coloured metal. Between both standards a disc turns in which is also a silver coloured counterpoise. The disc is 25 mm thick and has a diameter of 105 mm. The turning point of the disc is not in the center of it but about 15 mm above it (figure 6). The capacity is up to 250 grams. Up to 50 grams it has an interval of 5 grams and after of 10 grams. The pan is screwed to both load-arms (figure 7). Between the four pivot-points at the top is a small rectangle of acrylic of 27 x 38 mm. The base is 10 mm thick and the pan 7 mm. The pointer is a red line on the front standard. The total height is 225 mm.

This scale is made by Steinhorst in Betzdorf (Germany). It was in production until 1993. With pride the importer told me Queen Beatrix also bought this letter-scale.



Figure 6.

Figure 7.



The Assay Ton

BY NORMAN BIGGS

Assaying is the science of estimating the quantity of a particular substance, such as gold or silver, that is contained in a mixture of several substances. For example, in medieval times it was necessary to test a sample of the metal intended for silver coinage in order to ascertain its *fineness*, that is, the proportion of pure silver that it contained. As well as the technical process of testing, the result had to be obtained by non-trivial calculations, and for that reason it was convenient to choose a standard size of sample. As early as 1280, it was stated that:

Nowadays an assay is made of ten pennyweights, that is half an ounce, weighed with the greatest accuracy.¹

The author goes on to explain that the half-ounce sample was used because it is equal to 240 grains. Since there are 240 pence in a pound (of money), each grain of pure silver in the sample represents one penny in the pound. The question of the fineness of silver was thought to be crucial for the economic health of England, and so, from the fourteenth century onwards, the authorities sought to enforce a standard of 92.5% for all 'silver' objects, not just coins. This standard has been maintained to this day.

By the sixteenth century there was another context where accurate assays were needed: in the mining industry. The main difference was that a large amount of ore would typically yield only a small amount of metal. For example, the percentage of copper in copper-bearing ore was rarely much greater than 10% (in modern times it has dropped to below 1%). Only a small quantity of ore can be assayed, and that yields a very small quantity of metal. For this reason the weights used commercially to measure the amount of ore are of a different order of magnitude to those used in the technical process of assaying, and some means of relating them is required. The proportion of metal in an ore is best expressed simply as a percentage, a number between 0 and 100. But the estimation of this number requires measurements in standard units, and historically the units were often baroque in their complexity.

An account of this problem was given in the classic textbook on metallurgy² written by Georgius Agricola and published in 1556. He described how two kinds of weights were used in the mining industry, one for weighing the ore in bulk, and one for assaying samples, and he called these the 'greater' weights and the 'lesser' weights respectively. His illustration of two sets of lesser weights is shown in Fig. 1: the first set shows the denominations used in assaying for gold and silver, and the second set was used in assaying copper ore. Agricola stressed that in each case the denominations were the same as those used to weigh the ore, although the ore-weights were in fact much larger. Unfortunately his account is confused by the fact that, since he wrote in Latin, he used Latin names for the weight-units, whereas in practice the units were part of a medieval Germanic system. Nevertheless, the idea of using proportional weights in order to simplify calculations was clear.

Figure 1. ♣ ♣ Agricola's picture of assayer's weights, 1556.

The system described by Agricola was simple in theory, but it was not well-adapted to the complexities of industry and commerce in the later sixteenth century. Many original documents concerning the mining and assaying of copper in England at that time are reproduced in M.B. Donald's book *Elizabethan Copper*. These documents refer to a baffling variety of weights and measures, even more confusing than Agricola's. The situation was not improved by official attempts to standardize English weights and measures. In 1588 it was decreed that the *troy* weight-

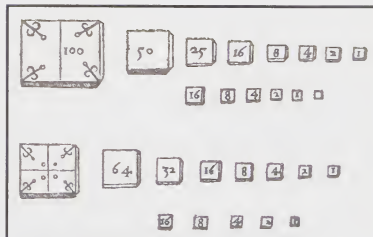




Figure 2. // A box of assay ton weights made by Baird and Tatlock, 1904-25.

system should be used for precious metals, whereas the *averdepois* (often spelt 'avoirdupois') weight-system should be used for most other things, including (of course) ore. The two systems both employ pounds and ounces, but they have different magnitudes, and whereas 12 troy ounces make a troy pound, 16 averdepois ounces make an averdepois pound. Even more problematical was the fact that the relationship between the two systems was not fixed by statute. It was not until 1824 that a definite relation between the two systems was established, by declaring that one averdepois pound equals 7000 troy grains.

Clearly, assaying calculations were not trivial. By the second half of the nineteenth century assayers were faced with a further complication, the growing use of the metric system in scientific and analytical work. They were expected to report their findings by saying that a certain ore would yield so many troy ounces of metal per averdepois ton, even though they were using metric units (grams and milligrams) in their laboratories. Thus three different weight-systems were involved in a single operation.

In 1869 the American chemist Charles F. Chandler¹ wrote an article entitled 'A new system of assay weights'. In it he pointed out that complicated calculations could be avoided if assayers were to use a mass-unit, to be known as an *assay ton*, defined by the following rule:

the number of troy ounces of metal in one ton of ore
is equal to
the number of milligrams of metal in one assay ton of ore.

The yield of the ore in troy ounces per ton would thus be given directly by the result of the assay, without any need for calculation. Chandler used the American ton of 2000 averdepois pounds which was equivalent to

$$2000 \times 7000 = 14,000,000 \text{ grains} = 14,000,000 / 480 = 29166.6... \text{ troy ounces.}$$

It follows that the assay ton should weigh 29166.6... milligrams, that is 29.1666... grams.

Chandler's unit was quickly adopted by assayers. Fig. 2 shows a box of assay ton weights made by Baird & Tatlock of Edinburgh, Liverpool and Glasgow, and reliably dated to the period 1904-1925. The unit weight is engraved

$$1 \text{ ASSAY TON} = 29.1666,$$

which is the value proposed by Chandler.

There were, however, two complications.

- Although the British and American pounds were the same, the American (short) ton contained 2000 pounds, whereas the British (long) ton contained 2240 pounds.
- In some laboratories, analysis was still carried out in imperial units (hundredths of a troy grain), rather than metric ones.

- X3530 **SET OF ASSAY TON WEIGHTS**, in a box, with forceps. English long ton standard, one ton = 2240 lbs.; One A. T. = 32.666 grammes. 4 AT down to $\frac{1}{10}$ th
 For set 15/-
- X3531 **Ditto**, English long ton standard, one ton = 2240 lbs.; 1 AT = 32.666 grains. 4 AT down to $\frac{1}{10}$ th Per set 15/-
- X3532 **Ditto**, American short ton standard, one ton = 2000 lbs.; 1 AT = 29.166 grammes. 4 AT down to $\frac{1}{10}$ th Per set 15/-
- X3533 **Ditto**, American short ton standard, one ton = 2000 lbs.; 1 AT = 29.166 grains. 4 AT down to $\frac{1}{10}$ th Per set 15/-

Figure 3. Excerpt from Gallenkamp's catalogue, 1911/12.

For these reasons, catalogues of weighing apparatus from the early 1900's offer *four different* sets of assay-ton weights (Fig. 3). The mass of the relevant assay ton in each case can be calculated in the same way as in Chandler's case, giving the results in the table below.

		<i>Unit for the analysis</i>	
		<i>0.01 grain</i>	<i>milligram</i>
<i>Unit for the ore</i>	<i>American short ton (2000 lbs)</i>	291.666... grains	29.166... grams
	<i>British long ton (2240 lbs)</i>	326.666... grains	32.666... grams



In the nineteenth century several 'new' metals, such as platinum and palladium, were being produced in commercial quantities, and the demand for them required the services of firms who specialized in assaying. In England, one of the first of these firms was founded by John Johnson, a London goldsmith, around 1777. In 1801 the firm expanded to include the assaying of ores, and in 1829 it became known as Johnson and Sons. By this time another member of the same family had set up the rival business that eventually became the bullion dealers Johnson Matthey & Co."

Obviously Johnson & Sons were accustomed to using accurate weights, and in the Post Office London Directory for 1865 the firm was described as. *assayers to the Bank of England, and her Majesty's Mint, assayers of*

Figure 4. 'Tinsel Weights' by Johnson & Sons, c1900.

bullion, metals, minerals, pigments etc., refiners of platinum, manufacturers of nitrate of silver and other photographic chemicals (wholesale), manufacturers of bullion and other standard weights, chemical apparatus, etc. Importers and collectors of minerals and mineralogical specimens.



Figure 5. Two boxes of weights sold by Johnson's of Hendon, mid-twentieth century.

Fig. 4 shows a box of 'Tinsel Weights' by Johnson & Sons, probably dating from around the end of the nineteenth century. It contains 28 pill-boxes, each of which contains one or more tiny weights for use in the assaying business. Particularly interesting is the box in the bottom right-hand corner, which is labelled '1/48 of a ton Nickel'. The weight is stamped 6.805, and its actual mass is 0.43g, which equates to 6.805 grains. Since $6.805 \times 48 = 326.64$ we can conclude that it represents 1/48 of an assay ton, the nickel ore being weighed in long tons and the assay being carried out in hundredths of a grain.

The subsequent history of Johnson's is of some interest. Their knowledge of such things as silver nitrate resulted in their becoming one of the leading suppliers of photographic chemicals and equipment, and in due course the firm became known as Johnson's of Hendon. The firm retained its expertise in weighing equipment, and small boxes of weights made by them for the amateur photographer (and apothecary) turn up regularly (Fig. 5).

References:

1. *Tractatus Nove Monete* (Treatise on the New Money, attributed to William de Turnemire). Available in Latin with an English translation, *The De Moneta of Nicholas Oresme and English Mint Documents* (ed. C. Johnson) London: Nelson, 1956.
2. Georgius Agricola. *De Re Metallica*, Basel 1556. Translation by H.C. and L.H. Hoover, New York: Dover, 1950.
3. M.B. Donald. *Elizabethan Copper*, Whitehaven: Michael Moon, 1989.
4. M.T. Bogert. 'Charles Frederick Chandler', *Biog. Mem. Nat. Acad. Sci.* (14) 1931, 127-181.
5. [Gallenkamp & Co.] List No. 60: *Catalogue of ... Balances and Weights*, London: 1911/12.
6. D. McDonald. *The Johnsons of Maiden Lane*, London: Martins, 1964.

My Introduction to Scale & Weight Collecting

BY LESLIE MUNN

I was brought up in Dorking, Surrey, together with my younger brother. Our father ran his own general grocery store, what might be called a small corner shop. It was however sufficiently large to provide a hundred customers with their rations and other goods during the 1939/45 war.

It was equipped with three sets of scales. There was a small counter scale with a square china plate on the bacon counter, trade scales with a scoop for loose fruit and vegetables and a semi-self-indicating fan scale used for dairy produce and other items such as biscuits which were sold loose. The shop also had two liquid measures: one for vinegar drawn from a barrel, and the other for paraffin, which was sold for oil lamps and heaters.

Both my brother and I helped in the shop, but grocery did not appeal as a profession. My brother went to University to study Biology and I entered engineering. Our father sold the shop in Dorking, then for a number of years ran a similar shop in a village and ended his working life with a sweet and tobacconist shop in a Somerset town. I remember that he had a rather nice confectioners' scale for the loose sweets. I spent most of my engineering life with the Atomic Energy Authority and retired from the Winfrith, Dorset, site in 1990.

A little while after retiring I joined a Christian charity called 'Tools with a Mission' (www.twam.co.uk). Our aim is to help to relieve poverty world-wide by providing the craftsmen of the developing world with the tools they need to earn a living. The supply of tools comes from those that are no longer used or wanted in this country and are sitting doing nothing in sheds and garages, etc. Tools with a Mission has collectors across the country and the headquarters is in Ipswich. One day I opened a donated toolbox and found an 8 oz weight (Fig.1). I was both puzzled and intrigued by the markings. A visit to the Shire bookstand in our local museum provided J.T. Graham's book and the fact that the weight was stamped in Arundel (for more details see below). A few days later a charity chop sold me a small wooden box with several old weights and some little scales. I was hooked and have been collecting ever since.

The weight has the marks of the London Founders Company, a crown with SUSSEX underneath, and, most important, a bird above the letters A.C. The last mark is a pun: the bird is a swallow, in French, hironnelle, and for many centuries it was used as the seal of the Ancient Borough of Arundel in Sussex (Fig.2). I am told that this mark is quite rare, since Arundel is a small place. Weights and measures were stamped there from 1835 onwards, and the mark was recorded as being still in use in 1882. It cannot have been used later than 1889, because in

Fig. 2. "

Fig. 1. "



that year the borough had to give up its jurisdiction over weights and measures, because its population was less than 10,000.

Notes:

Further information about Tools with a Mission can be obtained from Leslie Munn.



Demystifying the “AR” & Learning about French “C” Spring Scales in the Process

BY STEPHEN BARNETT

I recently acquired the “C” spring scale shown in Figures 1 and 2. Three things about it intrigued me. Its combination of the brass dial, iron and brass mechanism, and broad iron hand, is different in appearance from other flexure spring scales in my collection. It is mechanically simple, yet elegant, using a rack and pinion gear system to convert the vertical movement of the distended spring into rotational movement of the hand to point to the weight on the dial (Figure 3). Finally, the dial is marked off in small weight units, and in larger units, “AR”, which are 25 of the smaller units (Figure 4). By hanging a 7 and 14 pound weight, I concluded that the smaller units are pounds. Thus, the capacity of the scale is 165 pounds or 6AR 15 pounds. The scale was made by “LEBRETON FILS-AINE A SOURDEVAL” (Figure 5). Sourdeval is in the south east corner of the Normandy Province of France.



Figure 1. French C spring scale with a capacity of 6 AR 15 pounds (165 lbs). The dial is 4 7/8" in diameter.



Figure 2. Detail of the back of the scale showing C spring and rack and pinion.

My research into the scale attempted to answer four questions: When was the scale made? Is its design unusual? What is an “AR”? What does that tell us about the purpose of the scale?



Figure 3. Showing detail of the rack and pinion with the C spring visible in the background.

Figure 4. ↗ Detail of the Lebreton scale dial showing the 6 AR 15 lb capacity.

The spring is one of the basic principles for measuring weight. The coil [or helical] spring is the most common form. However, the flexible steel spring in the shape of a “V”, or a “C”, or an overlapping circle or oval was a popular solution in the 18th and 19th century. Scales which were made with flexible springs suited the agrarian economy in Europe at this time. They were portable, rugged, reasonably accurate, and



did not require a separate, heavy poise like the steelyards. But perhaps most importantly, for their size, they had enormous capacity. I have a mancure, whose spring is $3\frac{3}{4}$ " high by 3" wide, with a capacity of 150 kilograms. As I have learned in researching this article, this is a relatively low capacity flexure spring scale, and that the production and use of flexure spring scales continued into the 20th century. The “C” spring design rapidly replaced the “V” spring design because the former could be graduated for a much greater range of units, and can be read more easily, and more accurately.

There are two articles in EQM which help to answer the first two questions. In an article titled “Mancure Balances!” Maurice Stevenson discusses the history of mancurs and the use of the flexible metal spring. On page 431, he wrote, *The use of spring metal for balances was recorded in the late 17th century and the sector, or Vee-spring type, is known to have been in production around 1750. The helical type was being manufactured by Richard Salter in West Bromwich, England, c1770, and, by the turn of the century, steel strip was bent into various other shapes, as weighing resistants.* From a variety of evidence, Stevenson concludes (page 431) that *the mancure must have been invented before 1763.* King George III had one in his collection of instruments. They were used for many purposes and were produced into the middle of the 20th century. The article talks about the variety of weight units in which they were graduated, including pounds, French



Figure 5. ↗ Makers stamp on the back of the dial of the authors C spring scale.

pounds, kilos, German pounds, and Russian pounds. It also describes the wide range of capacities of the maneur. In one example that he knew of, the capacity was 350 pounds. Further, Stevenson notes on page 433 that *A French catalog of the 20th century lists maneurs with capacities of 50, 100, 150, 200, 300, or 400kg.*

In an article titled “Maneurs”, Diana Crawford-Hitchins also wrote about the history of these scales, with information about the development of the flexible “C” spring scale in France. On page 1865, she wrote, *Hanin developed a C spring with a rack and pinion joining the two ends of the spring to the pointer; with a circular face mounted on the front so that the C spring was hidden from view. This was called the ‘peson a cadre circulaire’ by the French, and is abbreviated to C in the table³*. Drawings of this scale in the article show that there are concentric circles on the solid brass dial with graduations for pounds in the major cities of Europe. Clearly it was intended for export to other countries. On page 1865 Diana also noted that the *Gazette de France* of 5th July, 1765 had an article in it about this scale, lauding its design: *The Officials nominated by the Academy to examine this instrument judge it to be very ingenious, executed with precision and suitable to be used because of these details which determine the weight of merchandise to be purchased or which*



Figure 6. ▲▲ Hanin C spring with narrow dial, graduated in kilograms, capacity 115 kg. The dial is 6 1/8" diameter and the scale is 12" long from the top of the ring to the bottom of the hook. Courtesy Bob Jibben.



Figure 7. <<< Hanin scale with 3/8" diameter dial and over all length of 6 1/2". Courtesy Jan Berning.

Figure 8. ▲▲ Detail of dial of small Hanin scale showing graduations in Kylog and Anc. P^{ns}. Courtesy Jan Berning.



are going to be sold. (Translation provided by Diana Crawforth-Hitchins.)

Diana then described (page 1867) the next steps in the evolution of the design of this type of scale as follows: *Hanin fils, (Guillaume Emmanuel Hanin,) made the same circular spring balances as his father, but cut away the centre of the dial so that the rack and pinion was visible to the user from the front. He was making this version before he left St. Romain in 1785/86 to work in the Paris workshop. See the photograph in Le Système métrique, page 727, which shows the dial cut away to a fine ring, leaving less of the brass dial than other, later makers.*

Figures 6 and 7 are examples of Hanin's work. Figure 6 shows the narrow dial version. It is graduated only in Kylogs, with a range of 0-115 (approximately 50 pounds). Presumably he used a narrow dial to save brass, or to make the scale lighter and more portable, or to show off the rack and pinion mechanism.

Figure 7 shows a later Hanin scale which is graduated in Kylogs and ANC. P^{ns}. (Figure 8) The dial looks wider than the one in Figure 6. Interestingly, even with the two graduation units, it is only 7/8" wide. (The dial on my Lebreton is 1 1/4" wide and 4 7/8" in diameter with one graduation unit) When I questioned Jan Berning about the width she reminded me that the dial is only 3 1/8" in diameter and the scale is 6 1/2" long, including ring and hook. *You can hold it in your hand*, she said. It seems likely that Hanin and others made the dial wider to accommodate the two graduation units.

Figure 9. Three French C spring scales of different sizes, capacities and makers all graduated in kilograms.

Courtesy Steve Beare.





Figure 10. // Back of three French C spring scales showing variations on the basic design.

Courtesy Sieve Beare.

Steve Beare suggested, in an email to the author⁴, that ANC. P^{ns} stood for “ancienne poids” or old weight⁵. This suggests that the scale was made for commercial use as France was adopting the metric system starting in 1799⁶. Diana confirms this idea when she wrote (page 1867): *Chemin a Paris made C springs attached by rack and pinion to the pointer; clearly engraved ‘Brevet d’invention Hanin. Chemin a Paris,’ and calibrated [sic] in 2 units, livres and kilos. Presumably this was made after Hanin fils made his 2 unit version graduated in kilos and poids de marc, exhibited in 1806.*

Diana’s article contains drawings, Figures 11 and 12 (page 1868), from the front and from the back of a scale just like the Lebreton scale shown in figure 1. It is graduated in kilos with a capacity of 55 kilos. Its overall height is 8”; the Lebreton is 9 7/8”. The maker is unknown. Her table of “Names seen on Mancur Balances” (page 1875), includes “Lebreton Fils aine a Sourdeval” as a French maker of C spring balances. There is also listed Eugene Lebreton, also a French maker of C spring balances. Unfortunately there is no mention of the relationship, if any (father and son, son and father, brothers, or something else).

So in answer to my first two questions, it is likely that my Lebreton scale was made at the end of the 18th century or beginning of the 19th century. The design is well known and used by a lot of the French makers. Bill Doniger also has a French C Spring in his collection which is also graduated in AR, stamped on the back of the dial “LEBRETON FILS-AINE” but without the location. Steve Beare provided pictures (Figure 9 and 10) of the front and back of three different C Spring scales from his collection which nicely illustrate the subtle differences in each maker’s adaptation of the basic design. He also provided information about the scales which is included in Table 1, along with the same information for the other scales discussed in this article.

FIGURE NUMBER	1 - BARNETT	6 - JIBBEN	7 - BERNING	9 LEFT BEARE	9 CENTER BEARE	9 RIGHT BEARE
MAKER	Lebreton Fils	G.E. Hanin	G.E. Hanin	DB	Unknown	G. Fleuri
CAPACITY	6 AR 15 lb (165lb)	115 Kg	25 Kg and 50 ANC. Pds.	100 Kg	75 Kg	210 Kg
LENGTH	9 ⁵ / ₈ inches	12 inches	6 ¹ / ₂ inches	10 ¹ / ₄ inches	11 inches	12 ¹ / ₄ inches
DIAL DIAMETER	5 inches	6 ¹ / ₈ inches	3 ¹ / ₈ inches	5 ¹ / ₈ inches	5 ¹ / ₄ inches	6 ¹ / ₄ inches

Table 1. Pertinent data on C Spring Scales in Steve Beare's Collection and others described in this article. Diana lists DB (or BD) in her maker's table, but as a maker of "ordinary maneurs"; and lists G. Fleuri as a French maker of C Spring scales. The Fleuri scale is stamped 1828 and L.I.V (54) which is probably a piece number.

However, having gotten all this information and examples of this scale design, the questions of: What is an AR? (figure 4) and What is the purpose of the scale? still needed to be answered.

Assuming that AR was a French weight unit, probably having to do with agriculture because Sourdeval is in a farming area of France, I checked my college English-French dictionary. It was no help. At the Kansas City Convention in May, 2009, I did a "Show and Tell" presentation in the hope that one of the members attending would have the answer. None did. One of the members with a friend in the French scale society offered to contact them to see if we could get an answer. Thus far, we have not had a response.

Recently, my wife and I were thumbing through Bruno Kisch's book¹ to get information about a Nuremberg weight set that we had just bought. The book happened to open to Appendix 3 "World Weights and Metric Equivalents". My first thought was: is "AR" listed? It is not. Are there any weights included for which AR could be an abbreviation? On page 238, he lists four that start with "Ar". One of them, Arroba, is described as follows:

Weight or liquid unit in Spain and Portugal. Castilian arroba (in Madrid, Malaga, etc) = 25 libras (pounds) = 50 marcos = 11,522 kg; 4 arroba = 1 cent (hundredweight) or quintal; 6 arroba = 1 quintal macho (heavy cent). Alicante and Valencia: 1 arroba = 24 libras machores (heavy pounds) = 36 libras menores (light pounds) = 432 ounces; 4 arroba = 1 quintal; 10 arroba = 1 cargo; 1 arroba = 12.452 kg. Oil arroba = 36 light pounds = 12,853 kg; 35 oil arroba = 1 pipe oil. Portugal (especially Lisbon): 1 arroba = 32 libras = 64 marcos; 4 arrobas = 1 quintal; 1 arroba = 14,696 kg.

So at last we have a likely answer for demystifying the meaning of the "AR" and the intended market for the scale. The scale was made in France for export to the part of Spain where the Castilian arroba was used, possibly in connection with bulk agriculture products. According to "The Handbook of Weighing Instruments", page 126, the metric system was adopted in Spain in 1849. So this scale would not have been made after that.

For members who have scales that are graduated in unusual units, Kisch's Appendix 3 is a good place to start looking to learn more about the weight units. My research taught me that this Appendix was a valuable resource for answering my nagging questions about the scale's originally intended use and location. Others may find it and Appendix 2 "World Weight Standards Before the Metric System" helpful in answering their questions.

Notes:

1. EQM 1982, Issue No. 2, pp431-435.
2. EQM 1995, Issue No. 1, pp 1863-1876.
3. "Names Seen on Mancur Balances" page 1874-1876 of the reference.
4. Email dated October 10, 2009.
5. In an email to the author, dated October 31, 2009, Diana Crawford-Hitehins confirmed this interpretation and further noted that

"The French had in effect, a dual system, and still do. Officially things are weighed in metric kilos. Unofficially, in markets and in the home, the French often still use the ancient system of livres (French for pounds). If you go to the market, you can ask for "un livre des pommes", that [is], a pound of apples, and you will get it."

6. Crawforth, Michael, "Handbook of Old Weighing Instruments", ISASC, Jan. 1984, p 126.

7. Kish, Bruno, "Scales and Weights – A Historical Outline".

Author's Biography:

We have been collecting antiques for a number of years. We have been fortunate to buy particular kinds like clocks, furniture and stained glass before the prices went way up. In 1996, when I asked Kathy what will go up in value next, she said without hesitation "scales". As our collection grew, we discovered that scales and weights are interesting looking decorative objects that demonstrate the ingenuity and craftsmanship of their makers. We have created an eclectic collection which appeals to our interest in history and technology. Our collection contains examples of the variations in mechanical designs that were created to apply the laws of physics to measure weight in many different applications.

Review

Admissions en France de Poids, Mesures et Instruments de Pesage ou de Mesurage de 1800 à 1970 by Aimé Pommier. Published by le Société métrique de France, Paris, 2009. Given to each member of the Société métrique de France, in addition to their regular journals.

I must start by admitting that my schoolgirl French is not adequate for reviewing this book, but, as it is a useful tool for collectors, ISASC members should be able to assess its usefulness and consider buying it.

The title gives the basic idea of this list, 'Approvals of Weights, Measures, and Instruments for Weighing and Measuring, 1800-1970.' The approval was only for items that had some new idea involved. The approved instruments were verified and marked for trade use, so the list does not include postal, diamond or coin scales (as far as I can see) but does include grain, person and laboratory scales as well as the more conventional trade scales.

The list is divided into Measures of Length, with 9 A4 size pages, Measures of Capacity both wet and dry, with 11 pages, and Weighing with 94 pages. It contains 2300 applications, both approved and refused, plus numerous cross-references of agents or representatives selling products by French and foreign makers.

The period 1800-1970 is covered, but the list is alphabetical by name, so the 15% of pre-1900 makers are hidden amongst the 85% of 20th century makers. The earlier makers have better descriptions of their offered product than do the later makers.

For what is the list useful? Being alphabetical, the obvious way in is via a known name. So I sat down with a French dictionary, and the Handbook of Old Weighing Instruments, pages 95-102, (for help with specialised technical French words). I looked up 'Bouillée', and I found that he was a maker in Chaion (Saône et Loire) and he got his approval on 2.4.1883 for a moving beam [bismar?] with two sets of graduations, 0-40 k and 40-200 k. The head carried the suspension hook, two knife-edges took the load hooks, a taring cylinder was mounted on a shaft, with a pointer indicating the weight. This is a reasonably useful entry if one has seen such a scale.

Then I looked up 'Martin-Decker' of Long Beach, USA, represented by Gilton of the town of Avray, France, and found that they got approval on 5.10.1965, for a platform scale. That was all I learned from that brief entry.

Sometimes I learned that makers presented a pan, an indicator, a hook, or just a change of name. Thankfully, no attempt has been made by Pommier to add knowledge from other sources, so Alexandra, (one of the trade names of A von der Nahmer of Remscheid, Germany), has been left with the notation 'Maker not known'. A few trademarks are described in words but not shown pictorially, unfortunately.

So, we can get a town, or a full address, in a specific year, and a vague description of the product. This is useful, but considering the phenomenal amount of work involved in compiling this list, it is disappointing. My respect for Aimé Pommier is undiminished, because he works so hard on behalf of the SM de France, but ISASC members may find other sources more useful to them.

DIANA CRAWFORTH-HITCHINS

Underneath the Arches

BY JOHN KNIGHTS

The town of Dubrovnik stands on the Eastern shore of the Adriatic at the Southern end of what is now Croatia, which has the distinction of being the only country shaped like a boomerang.

For centuries the little walled city that now forms the main tourist attraction of the area was the hub of the republic of Ragusa. This was a small but influential state, renowned for its seafaring and ship building skills, that managed to retain its independence from rampaging Turks and Venetians, partly because of its support from the mighty Spanish Empire (the Spanish Armada was apparently partly manned by Ragusan sailors). This all changed when Napoleon marched in to Dubrovnik in 1806, and carried out his own version of Local government reorganisation.

Despite its small size, it was apparently a successful state that conducted a healthy trade in the essentials of life and ensured that its citizens were well provided with food. The government of the state had efficient mechanisms for buying grain, which was stored in underground silos known as 'dry wells'.



A fine arcade encompasses the atrium of the Gothic Sponza Palace, which stands within the walled city. This building was formerly used as both customs house and mint, and the end arch has an inscription engraved around it, which reads: 'FALLERE NOSTRE VETANT ET FALLI PONDERA MEQUE PONDERO CUM MERCES PONDERAT IPSE DEUS'. This apparently means something like: 'Our weights cannot cheat, when I weigh the goods, God is weighing me.' (Latin scholars please feel free to correct.) A great beam once hung beneath the arch

and clearly, having had the injunction to weigh fairly incorporated into the very architecture of the building, the Ragusans regarded fair weighing as being of fundamental importance, equivalent to a religious duty.

Modern Dubrovnik is largely devoted to extracting kuna from visitors and most of the properties within the walled city, that aren't churches or museums, are now shops selling tourist tat or restaurants serving copious quantities of squid ink risotto.

There is however a daily market selling 'proper' commodities and the weighing of the fruit and vegetables is largely carried out on traditional Béranger counter machines of uniform design and Croatian manufacture.





A Balanced View

Well, what a busy summer it has been. We were pleased to have Karen and Steve Beare and their son Ken visit us for a few days in August, first at the lake and then in Toronto and then we all continued on to the Michigan Get-Together at Bev and Greg Moss's home in Waterford. We saw lots of friends, a few new scales and had a wonderful lunch. Greg had everyone participate in a quasi 'scavenger hunt'. Everyone was given a list of the 60 scales he had displayed throughout his home; our task was to find them. First prize went to Ken Beare and Dian Laycock who found all sixty, plus two more that were not on the list.

In October, we stopped off to see a few scale collections on our way to the regional meeting at the Katz's in Pennsylvania.



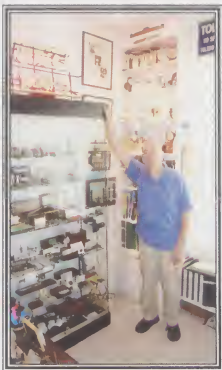
First we spent a day with Cathy and Steve Barnett at their home in Ellicott City, Maryland, where we enjoyed a nice lunch and spent several hours enjoying their extensive scale collection. Their scales are nicely displayed throughout their home and the collection covers almost every type of scale. As is often the case with collectors, they have several other collections, one of which is a wonderful collection of antique clocks. This is a 'not to be missed' collection if you are ever in the Washington, DC, area.





Next we travelled to Wilmington, Delaware, to spend a couple of days with the Beares. Their house is absolutely treasure-filled with many interesting collections. Karen has amassed a world-class collection of English China that would be the envy of any museum. Steve has a truly outstanding collection of laboratory and scientific scales. Here we see him in his study where, besides his scales, he has a wonderful accumulation of antique scientific instruments, thermometers, musical instruments, playing cards,

measures and several other unique collections. However, it is his collection of antique books and his study of bookmaking that really caught my attention. He has a collection of over 50,000 volumes. He is in the process of writing a book on the almost lost art of designing, cutting and applying stamps that were widely used in decorating fine antique books.



Next it was on to the first Mid-Atlantic Regional Meeting where seventeen avid scale collectors from Delaware, Illinois, Maryland, New York, Pennsylvania, Virginia and Canada got together at the home of Mary and Jerry Katz in Downingtown, Pennsylvania. It was a treat to see Jerry's collection of scales and other related material. He has a wonderful collection of postal and coin scales. As well, in the Katz's living room is a splendid display of art that Jerry has created over the past twenty or so years. He tells us that he always



wanted to be an artist, but his dad did not think it was a good idea. Keep on painting my friend; the art is terrific. Give Jerry a call if you are in the area; I am sure he would be delighted to show you his collection.

Regional Meetings

This year we had a record number of regional meetings. It is gratifying to see so many of you getting together and sharing your interest in scale collecting. Indeed, four regional meetings were held in Michigan, Minnesota, California and Pennsylvania. Please visit our website to see the reports of these meetings; you may see someone you might know.

Portland 2010 ISASC Convention

The dates for the ISASC 2010 convention are May 20th through May 24th. Convention Central will be the Monarch Hotel in Clackamas, Oregon. A full and exciting program has been prepared by Convention Chairman Dick Clark. Of particular interest are visits to: Museum of the Oregon Territory, Evergreen Aviation Museum (the new home of the 'Spruce Goose'), Pittock Mansion and on Monday a trip to Mount St Helens. Please visit the ISASC website for complete details of all the activities that have been planned. I would encourage you to register early. Our annual convention is the highlight of the year, a time when we can all get together and share the passion that we have for scale collecting. There are generally over one hundred of us that attend the convention. If you haven't been to one yet we would love to see you next May in Portland.



Trip to Germany

Following our successful trip to the United Kingdom in 2008, a number of you have asked that we plan another overseas trip. Utz Schmidt has kindly agreed to put together a trip to his homeland Germany for October 2010. It would correspond with the German Scale Collectors fall meeting. He has been working diligently and has put together plans for a fantastic experience. We are fortunate to have Utz as our tour guide. He speaks the language and understands the local culture, but more importantly he can take us to and show us places that only someone with local knowledge can. He promises that there will be lots of scales to see and even to buy, if you are looking to expand your collection. He is anxious to share the details with you and has asked that anyone who may be interested in joining this trip to contact him as soon as possible. He will need to firm up plans early in the new year and therefore would like to have an indication of how many will be joining him. If you are interested please contact Utz by December 31st. Utz can be reached by email at uschmidt@avei.net or by phone at 810-376-4438.

It's a Test

Enclosed with this mailing are three forms that I would ask you to complete and return: a ballot for the election of officers, the annual dues notice and the annual fund raising drive for both the Endowment and Benefactor Funds. We have put all three together in an effort to save postage and to make it easier for everyone to deal with all of these at one time.

Election of Officers

It is time again to ask for your support in voting for the election of officers of ISASC. Please fill out the enclosed ballot and return it in the provided envelope. Mary Ann Murphy has been the keeper of the ISASC Collection since its inception some seven years ago. She has done an outstanding job. She has agreed to seek another term as Vice President so she can continue her work with the collection. Shirley Schmidt joined the board last year, when we asked her to complete the term vacated by Kurt Beyreis when he became Treasurer. Shirley has undertaken the role of membership and publicity chairperson and has quickly taken on the responsibilities of this position. She has agreed to seek a term as Vice President of ISASC to continue the good work she has initiated this year. If elected they will serve as follows;

Vice President, Mary Ann Murphy, (term June 1, 2010 to May 31, 2013)

Vice President, Shirley Schmidt, (term June 1, 2010 to May 31, 2013)

Dues Notice

Please note on the Change of Information form, at the bottom of the Dues Notice letter, we have added 'Year Joined ISASC'. Would you please, to the best of your knowledge, enter the year you initially joined so we can cross check our records.

Benefactor and Endowment Programs

We ask you to please be generous with your contribution to the Benefactor and Endowment Programs as you have been in the past. Your support contributes greatly to the on-going health and strength of the Society. Please note that this year the return form is printed on the back of the letter.

Book Sale

As we have indicated in the past, we have an inventory of books and other material that we offer for sale. The prices of all these items have been reassessed and lowered. This may be an opportunity for you to fill the gaps in your personal library of scale related materials. Enclosed with this EQM mailing is a list of materials available with the new prices.

Publicity Committee

Shirley Schmidt reports that following her request for volunteers in the last newsletter Bev Moss and Donna Schoenly are now members of the Publicity Committee. Thanks Bev and Donna for your involvement and support. Shirley is also planning to implement a 'first timer buddy system' for the annual convention where a current member would be assigned to welcome and assist first timers to ensure that they get to meet everyone and feel at home. If you are interested in volunteering please contact Shirley by email at sschmidt@avci.net.

Website Updates

Carol Hayden advises that the website has been updated to include the following:

1. The invitation to the 2010 ISASC Convention in Portland, OR, next May.
2. Reports on the four regional meetings held this year in California, Michigan, Minnesota and Pennsylvania.
3. A new link to Collecting American Measures, which is the website of new member Howard Cheifitz.
4. The Euro Chapter newsletter *Fulcrum* which always includes interesting tidbits with lots of pictures and is well worth the time.

Welcome To New Members

I would like to take this opportunity to welcome the following new members and encourage them to contact any of our members should they have questions.

Jaclyn P. Young	Del Mar, CA
Jim Ridker	Skokie, IL
Howard Cheifitz	New Rochelle, NY
Walt & Gerry Schwanz	Waukesha, WI
Lyman Orton	Steamboat Springs, CO

Events

For those of you living in the Midwest you may want to take in an exhibition showing American coin-operated weighing machines selected from the nationally recognized collection of Christopher Steele which will be on display at The Urban Arts Space, Ohio State University, Columbus, Ohio, from February 2nd through March 7th.

In Memoriam

I am saddened to relate the death of fellow ISASC member Ellen Hicks of New Ipswich, NH. Ellen had been a member of ISASC since 1989. She is survived by her husband James.

Weights Wanted

(1) "Hi – I am a current member of ISASC listed in the Directory. I want to buy a 4 piece matched set of Postal Scale weights – 4 oz (1-7/16" diameter) – 2 oz (1-1/4" diameter) – 1 oz (1" diameter) & ½ oz (13/16" diameter). The diameter is the measurement of the holes in the base and all are all 3/16" deep. So the weights can be a little smaller in diameter. If you can fill my order, please e-mail me with my cost. Thanks, Richard Axelrood" richardaxe@comcast.net

(2) We have been contacted by Bertrand Merwin who is looking for postal scale weights for several scales. He requires a number of different sizes for scales made by Mordan, Avery and Perry and Co. For specific sizes please contact Bertrand by phone at 301-434-4443.

(3) Additionally, new member Michael McLaughlin specializes in Nuremberg nested weights and would like to correspond with other members who collect or have an interest in nested weights. Contact him at usmrmr@hotmai.com.

It is almost the end of another year. Your Society continues to do well. The ISASC collection was the recipient of several very generous gifts. We welcomed 16 new members. We enjoyed a wonderful convention in Kansas City. It doesn't get much better. To all my 'Scalie' friends everywhere please be sure to enjoy the festive season. Dian and I look forward to being with many of you sometime during the next year.

Keep on Scaling, Regards.

A handwritten signature in cursive script, reading "Peter Laycock". The ink is dark and the signature is fluid, with a large loop at the end of the last name.

Peter Laycock,
President ISASC